

Draft Environmental Impact Report/ Environmental Impact Statement for the Otay Mesa Conveyance and Disinfection System Project, San Diego County, California Presidential Permit Application Review

SCH No. 2014111033

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ACRONYMS/ABBREVIATIONS

µg/m ³	micrograms per cubic meter
AB	Assembly Bill
ACHP	Advisory Council on Historic Preservation
ADT	Average Daily Traffic
APE	area of potential effects
APP	Asociaciones Público Privadas
AQIA	Air Quality Impact Analysis
BA	Biological Assessment
BMP	Best Management Practices
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
Cal Fire	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CAS	Climate Change Adaptation Strategy
CBC	California Building Code
CCAT	California Climate Action Team
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDMG	California Division of Mines & Geology
CDPH	California Department of Public Health
CESPT	Comisión Estatal de Servicios Públicos de Tijuana
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CFC	chlorofluorocarbons
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CGS	California Geologic Survey
CH ₄	methane
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
CIP	Capital Improvement Program
CMP	Congestion Management Program
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO ₂	carbon dioxide
County	County of San Diego
CESPT	Comisión Estatal de Servicios Públicos de Tijuana
CRHR	California Register of Historical Resources
CRIDP	Cultural Resources Inadvertent Discovery Plan
CSRI	Cultural System Research, Inc.
CT	Census Tract
CUPA	Certified Unified Program Agency
CWA	Clean Water Act

CWC	California Water Code
dBA	decibels with A-weighting
DEH	County of San Diego Department of Environmental Health
District	Otay Water District
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
EDR	Environmental Data Resources
EIR/EIS	Environmental Impact Report/Environmental Impact Statement
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPIC	University of San Diego School of Law Energy Policy Initiative Center
ESA	Endangered Species Act
ESA	Environmental Site Assessment
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Federal Insurance Rate Map
Focus 2050	San Diego Foundation's Regional Focus 2050 Working Paper and Technical Assessment
FTA	Federal Transit Administration
g	acceleration of gravity
GHG	greenhouse gas
GIS	Geographic Information System
GP	General Plan
GPM	gallons per minute
GSA	Groundwater Sustainability Agencies
HA	Hydrologic Area
HCFC-22	chlorodifluoromethane
HCM	Highway Capacity Manual
HCP	Habitat Conservation Plan
HFC	hydrofluorocarbons
HGL	Hydraulic Grade Line
HHS	Department of Health and Human Services
HMBP	Hazardous Materials Business Plan
HPS	high-pressure sodium
HU	Hydrologic Units
Hz	hertz
in/sec	inches per second
IPCC	Intergovernmental Panel on Climate Change
JD	Jurisdictional Determination
kBTU	kilo British thermal units
kWh	kilowatt hours
L _{eq}	equivalent sound level
LF	linear feet

LOS	level of service
Major SWMP	Major Stormwater Management Plan
MAP-21	Moving Ahead for Progress in the 21st Century Act
MBTA	Migratory Bird Treaty Act
MCL	Maximum Contaminant Levels
MGD	million gallons per day
MIA	Manifestación de Impacto Ambiental
MLD	Most Likely Descendent
MMT	million metric tons
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organizations
MSCP	San Diego County Multiple Species Conservation Program
MSL	mean sea level
MT	metric ton
MW	megawatts
Mw	Moment Magnitude
MWDSC	Metropolitan Water District of Southern California
N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOI	Notice of Intent
NOP	Notice of Preparation
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NRHP	National Register of Historic Places
NSLU	noise-sensitive land uses
OEHHA	Office of Environmental Health Hazard Assessment
OHWM	ordinary high water mark
OSHA	Occupational Safety and Health Act
PCB	polychlorinated biphenyls
PDF	project design features
PEIR	2009 WRMP Program EIR
PFC	perfluorocarbons
PM ₁₀ and PM _{2.5}	particulate matter
POE	Otay Mesa East Port of Entry
PPV	peak particle velocity
PRC	Public Resources Code
proposed project	Otay Mesa Conveyance and Disinfection System Project
PRS	Public Road Standards
RAQS	San Diego County Regional Air Quality Strategy
RCNM	Roadway Construction Noise Model
RCRA	Resource Conservation and Recovery Act

ROD/NID	Record of Decision/National Interest Determination
RPO	Resource Protection Ordinance
RTIP	Regional Transportation Improvement Plan
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SANDAG	San Diego Association of Government
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SCIC	South Coastal Information Center
SCP	Standard Construction Practices
SCS	Sustainable Communities Strategy
SDAB	San Diego Air Basin
SDBP	San Diego Basin Plan
SDCWA	San Diego County Water Agency
SDG&E	San Diego Gas & Electric
SDWA	Safe Drinking Water Act
SF	square feet
SF ₆	sulfur hexafluoride
SHPO	State Historic Preservation Officer
SLF	Sacred Land Files
SR-11	State Route 11
STIP	Statewide Transportation Improvement Plan
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminants
TDS	total dissolved solids
Tg	teragrams
THPO	Tribal Historical Preservation Officer
TIS	Traffic Impact Study
TMDL	total maximum daily load
U.S.C.	U.S. Code
UBC	Uniform Building Code
USACE	U.S. Army Corps of Engineers
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
UV	ultraviolet
VdB	vibration decibels
VOC	volatile organic compounds
WAS	Water Agencies Standards
WRMP	Water Resources Master Plan

SUMMARY

The Otay Water District (District) and the U.S. Department of State (the Department) jointly prepared this Draft Environmental Impact Report/Environmental Impact Statement (Draft EIR/EIS), pursuant to the California Environmental Quality Act (CEQA) (California Public Resources Code Section 21000 *et seq.*) and consistent with the National Environmental Policy Act of 1969, as amended (NEPA); the Council on Environmental Quality Regulations (Title 40 Code of Federal Regulations [CFR] Parts 1500–1508); and the Department’s implementing regulations (22 CFR Part 161). The Draft EIR/EIS evaluates the potential environmental effects of construction, operation, and maintenance of the Otay Mesa Conveyance and Disinfection System Project (proposed project), which includes the construction of a steel potable water pipeline and other infrastructure improvements necessary to convey desalinated seawater produced in Mexico into the District’s service area in southern San Diego County, California. The scope of the proposed project for the purpose of environmental review consistent with NEPA and pursuant to CEQA is limited to the proposed facilities within the United States.

The environmental review of the proposed project is a joint effort by the District and the Department, and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with CEQA and is consistent with NEPA. The District is the CEQA lead agency and the Department is the NEPA lead agency.

Following receipt of public comments on the Draft EIR/EIS and circulation of the Final EIR/EIS, the District will determine whether to certify the EIR and issue Findings and a Statement of Overriding Considerations under CEQA. The Department will determine whether to approve or deny the Presidential Permit, and will issue a Record of Decision (ROD)/National Interest Determination (NID).

S.1 Overview of Project Area

The proposed project involves the construction and operation of an approximately four-mile-long, 48 to 54-inch-diameter potable water pipeline, and a metering station within the Otay Mesa area of the County of San Diego, just north of the United States-Mexico international border (Figure S-1). Additionally, a pump station and/or disinfection facility may be constructed if needed. The scope does not include the proposed desalination plant in Rosarito, Mexico, or the associated potable water pipeline and other related infrastructure in Mexico.

S.2 Purpose and Need/Project Objectives

Need

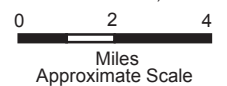
As a member agency of the San Diego County Water Authority (SDCWA), the District needs to diversify its long-term potable water supply portfolio to decrease its dependence on imported water supplies and to help meet demands within the District’s service area and the region (SDCWA 2014; 2010). The District



FIGURE S-1
Regional Location

100032058

Source: AECOM, 2015



Otay Mesa Conveyance and Disinfection System Project

currently receives its imported water supply from various domestic sources through the SDCWA aqueducts, as well as through joint use agreements with the neighboring Helix Water District to the east. SDCWA planning documents identify a need to diversify the region's water supplies in response to drought, seismic risk, and increasing demand for potable water from the Colorado River and the State Water Project (Northern California Bay Delta).

Purpose

The purpose of the proposed project is to provide for the conveyance of desalinated seawater, originating at a proposed desalination plant in Rosarito, Mexico, over the United States-Mexico border and into the District service area. The increased flexibility provided by the proposed project would increase the reliability of the District's ability to deliver water by providing an alternative supply source to SDCWA, including in the event of reduced availability or diminished supplies from other sources, or a shut-down of one or more SDCWA aqueducts; rising prices; or both.

Project Objectives

The District, as the CEQA lead agency, has developed the following project objectives in accordance with Section 15124(b) CEQA Guidelines:

- Maximize the District's operational effectiveness and system reliability to meet planned future water supply needs within its service area;
- Provide system flexibility in the event of a planned or unplanned operational interruption;
- Provide potable water that meets the requirements of the State Water Resources Control Board Division of Drinking Water for domestic drinking water;
- Implement the proposed project in accordance with the District's Capital Improvement Program and Water Resources Management Plan (WRMP); and
- Minimize effects on sensitive environmental resources located in the project area.

S.3 Scoping and Outreach

Both CEQA and NEPA processes involve noticing and outreach to the public and to agencies in the early stages of and throughout the environmental review process. Outreach allows interested parties to provide input into the scope and analyses conducted in the environmental document and to identify significant environmental effects and alternatives.

The District issued a joint Notice of Preparation (NOP)/Notice of Intent (NOI) consistent with CEQA and NEPA. The NOP/NOI was distributed through direct mailings and was published as a legal notice in the San Diego Daily Transcript and the San Diego Union Tribune on November 14, 2014. The Department published the NOP/NOI in the Federal Register to notify the public that a Draft EIR/EIS will be prepared to evaluate the proposed alternatives, and the proposed scoping process. The 30-day public review period for the NOP/NOI ended on December 13, 2014. Nine comment letters were received from other agencies and the public during the NOP/NOI public scoping period.

A public scoping meeting was held at the District's office located at 2554 Sweetwater Springs Boulevard, Spring Valley, CA 91978 on December 2, 2014, at 5:00 p.m. The meeting was designed to provide the public and governmental agencies with information on the proposed alternatives, as well as the NEPA/CEQA process, and to give attendees an opportunity to identify environmental issues and alternatives that should be considered in the Draft EIR/EIS. Comment letters could be sent to the District

during the 30-day NOP/NOI public scoping period by no later than December 13, 2014, or left with District staff at the scoping meeting to ensure that any concerns expressed could be addressed in the Draft EIR/EIS. No attendees were present at the scoping meeting, and no comment forms were completed and submitted to District staff at the scoping meeting or received by mail after the meeting.

The Department sent letters to 18 Indian tribes with an interest or historic footprint in the proposed project area. The Viejas Band of the Kumeyaay Indians requested additional information on the archaeological data within the project's area of potential effects and asked for a site visit to the area. On June 23, 2015, the project management team from the District and the Department escorted members of the Viejas Band to the proposed project area and shared information on the project.

The District and the Department reviewed all issues raised during the NOP/NOI public scoping period to determine the appropriate level of analysis in the Draft EIR/EIS and to identify issues and potential effects associated with implementation of the proposed project. In addition, the lead agencies will consider all comments received during the 45-day public comment period on the Draft EIR/EIS, and the comments will be included in an appendix in the final document.

S.4 Project Background

In 2009, the update to the District's WRMP identified the capital facilities required to provide potable and recycled water supplies to meet approved land use development plans and growth projections within the District's planning area through 2030. The WRMP also identified the need for the District to expand or offset local water supply resources in response to water supply issues related to the Sacramento-San Joaquin Delta and the ongoing drought conditions in the western states, and to address the rising costs of imported water from the Colorado River and Northern California. In response to this, the District identified a number of potential new local and regional water supply and offset projects, one of which included the proposed project, in an effort to help improve system reliability and flexibility throughout the District's service area.

The development of the desalination plant in Mexico will be as a Public-Private Partnership under Baja California, Mexico's 2014 revision of its Asociaciones Público Privadas laws. Interested companies must submit bids to be considered as the company chosen to construct a new 100 million gallons per day (MGD) desalination plant in Rosarito, Mexico. This plant would be collocated with the existing Presidente Juárez electrical generating facility. Cooling water effluent from the power plant would be used as the influent to the desalination plant. The project will be built in two phases. The first phase will be the construction of the desalination plant and a pipeline that conveys the water to a distribution point (Tank 3 site) operated by Comisión Estatal de Servicios Públicos de Tijuana, northeast of Rosarito. The second phase of the project is the pipeline to the United States-Mexico border, intersecting the border in the eastern portion of Otay Mesa. A smaller portion of the water produced by the plant will be conveyed from the desalination plant to the United States-Mexico border. The District is exploring options for the initial purchase of approximately 20 MGD of desalinated seawater with the possibility of purchasing additional water in the future. The District is not involved in the planning, design, construction, operation, or maintenance of any facilities in Mexico. The Mexican desalination plant and associated facilities are not dependent upon the proposed project and will be built regardless of whether the District's proposed project is approved. The District's involvement in the proposed project would begin at the United States-Mexico border. A detailed description of the proposed pipeline and facilities is provided in Chapter 2.

S.5 Alternatives Considered

The District and the Department considered several alternatives to the proposed action, which would transport water from the United States-Mexico border to the closest District facility, Roll Reservoir located in Otay Mesa. As a result of the security requirements in the immediate vicinity of the border, and the inefficiencies associated with trucking the water, the District and the Department determined a pipeline is the most practicable and feasible means of conveyance. Alternative pipeline routes, called alignments, are therefore the focus of the alternatives analysis in the Draft EIR/EIS, which also includes analysis of a No Action – No Project Alternative.

The Draft EIR/EIS identifies three conveyance pipeline alignment alternatives, beginning at the United States-Mexico border and ending at the District's existing Roll Reservoir (a covered water storage facility) located in Otay Mesa (see Figure S-1). The following sections describe the alignment alternatives from south to north. All three alignment alternatives begin at the United States-Mexico border, approximately 300 linear feet (LF) east of the existing San Diego Gas & Electric (SDG&E) power transmission lines and easement. This is the location of the pipeline terminus in Mexico. After starting at the same location, the three alignment alternatives diverge for approximately 4,000 LF, then merge again and follow the same alignment (referred to as the "common segment") for approximately 17,740 LF ending at Roll Reservoir. Figure S-2 identifies the three proposed conveyance pipeline alignment alternatives and additional infrastructure locations.

Proposed Alignment Alternative 1

Alignment Alternative 1 (herein referred to as Alternative 1) proposes a route for the potable water conveyance pipeline with a length of approximately 21,810 LF. The proposed conveyance pipeline begins at the United States-Mexico border connection point approximately 300 LF east of the SDG&E power transmission lines and easement and continues northwesterly for approximately 570 LF before turning approximately 90 degrees southwesterly for approximately 610 LF along an unpaved dirt road. It then turns northwest again at approximately 90 degrees and follows a dirt road for approximately 2,890 LF around a curve and a sharp right turn, slightly east of the connection with the future alignment of Lone Star Road. This is the beginning of the "common segment." From that connection, the proposed conveyance pipeline continues along and within the right-of-way of future Lone Star Road for approximately 4,210 LF until it reaches the existing, paved portion of Paseo de la Fuente (southerly cul-de-sac). The proposed conveyance pipeline then continues along and within the paved Paseo de la Fuente roadway for approximately 2,870 LF until it reaches the intersection with Alta Road. From the intersection of Alta Road and Paseo de la Fuente, the proposed conveyance pipeline continues north for approximately 8,660 LF in the paved roadway to an existing dirt roadway that provides access to Roll Reservoir. The proposed conveyance pipeline continues in the dirt roadway for approximately 2,000 LF and terminates on the eastern side of Roll Reservoir. Proposed Alternative 1 is the Preferred Alternative. This preference is because the alignment creates the greatest distance between the temporary impacts associated with pipeline construction and the sensitive habitat to the east of the project corridor.

Proposed Alignment Alternative 2

Alignment Alternative 2 (herein referred to as Alternative 2) proposes a route for the potable water conveyance pipeline with a length of approximately 21,400 LF. The proposed conveyance pipeline begins at the United States-Mexico border connection point and continues northwesterly parallel to the eastern edge of the existing SDG&E power transmission lines and easement for approximately 1,180 LF. At this point, the proposed conveyance pipeline crosses beneath the existing SDG&E power transmission

lines and easement and continues due west for approximately 380 LF. The proposed conveyance pipeline then turns to the northwest for approximately 1,270 LF, before turning due west for approximately 840 LF to the point where all three proposed alignment alternatives converge, which is approximately 550 LF east of the existing San Diego Gas & Electric (SDG&E) 24-inch gas pipeline. From this point, the alignment alternative follows the common segment until its termination point at Roll Reservoir.

Proposed Alignment Alternative 3

Alignment Alternative 3 (herein referred to as Alternative 3) proposes a route for the potable water conveyance pipeline with a length of approximately 22,580 LF. The proposed conveyance pipeline begins at the United States-Mexico border connection point and continues northwesterly parallel to the eastern edge of the existing SDG&E power transmission lines and easement for approximately 2,450 LF. It then turns due west, crossing beneath the SDG&E power transmission lines and easement, and continues for approximately 1,220 LF, until it is approximately 550 LF east of the existing SDG&E 24-inch gas pipeline. From this point, the alignment alternative joins the common segment until its termination point at Roll Reservoir.

No Action – No Project Alternative

The No Action – No Project Alternative represents current and future conditions if no pipeline and associated facilities are built and no Presidential Permit is issued. No construction, including pipelines or related infrastructure, would be built under this alternative. The project area would remain in its current condition and continue to develop as planned and described in the San Diego County General Plan (County of San Diego 2011a) and East Otay Mesa Business Park Specific Plan (County of San Diego 2010). The District would continue to obtain water from its current sources and pursue other means of acquiring additional water supplies.

Additional Project Infrastructure

The following facilities may be constructed with Alternatives 1, 2, and 3. The potential impacts resulting from the construction and operation of these facilities are fully evaluated in this Draft EIR/EIS.

Metering Station

A metering station is proposed near the United States-Mexico border, slightly north of the connection point. The metering station footprint is no more than approximately 1,000 square feet (SF). The station is located directly in-line or adjacent to the east side of the proposed conveyance pipeline, depending on the Alternative. A check valve or backflow prevention device is included downstream of the flow meter to prevent reversal of flow. The metering station would be a below-grade concrete vault with an above-grade masonry structure. The metering station location is identified in Figure S-1.

Potential Disinfection Facility

A potential disinfection facility is proposed at one of four potential locations along the conveyance pipeline alignment alternatives. The preferred location will be chosen during preliminary design. The potential disinfection facility would be enclosed in a masonry structure, and would have a footprint of approximately 37,500 SF, approximately 30 feet in height, with an additional 500 SF electrical site to power the facility. The four potential disinfection facility locations are identified in Figure S-1.

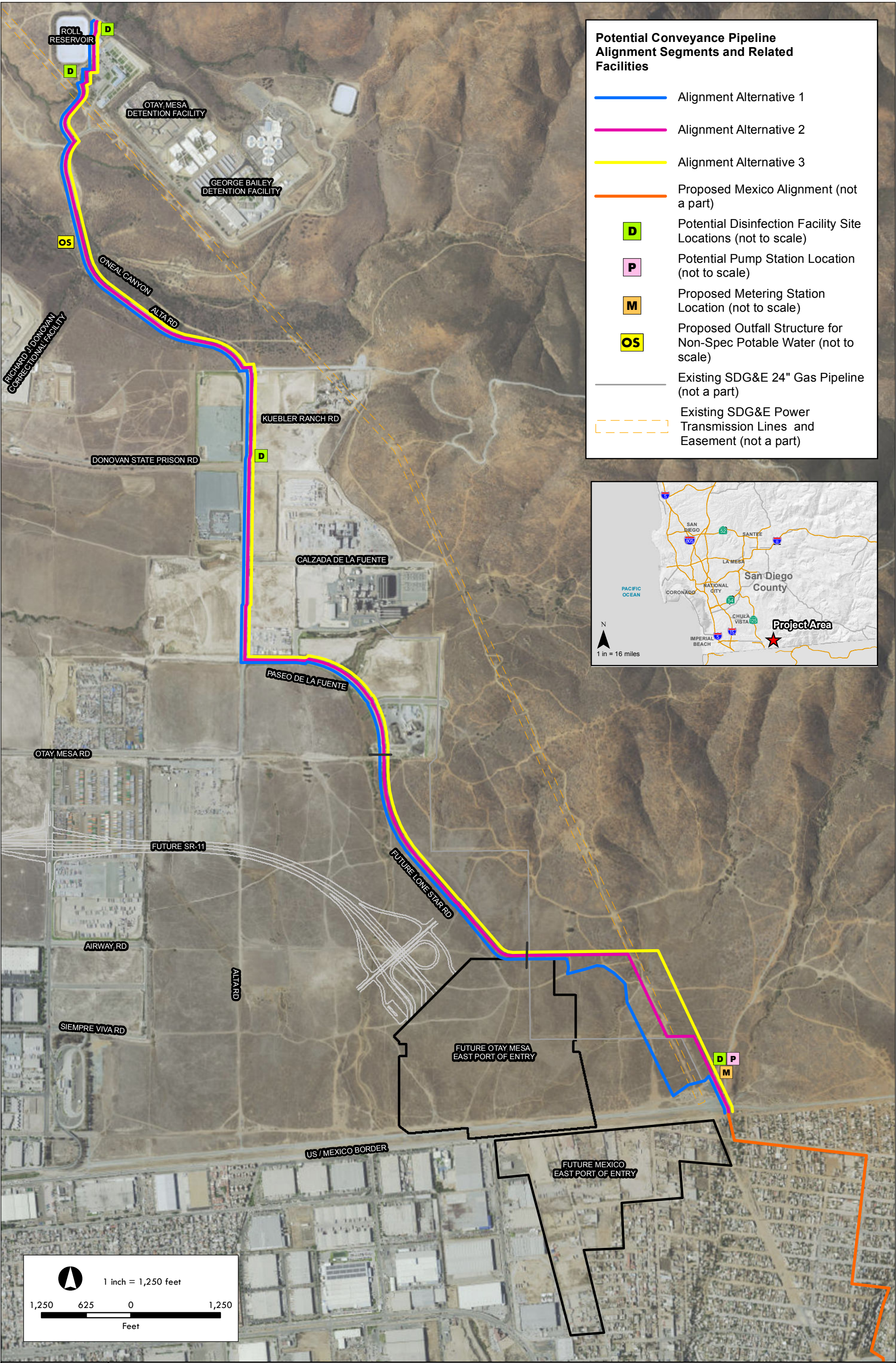


FIGURE S-2
Proposed Alternatives
100032058

Source: Atkins, 2014; San Diego County GIS, 2012; ESRI, 2014

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Outfall Structure for Non-Specification Potable Water

The proposed outfall structure is located along Alta Road south of the District's Roll Reservoir and would allow the District to off-load/divert water that does not meet quality specifications negotiated with the Mexican provider ("non-spec water") into O'Neal Canyon. The outfall structure consists of pipeline "T" fittings and a valve configuration that allows both insulation and discharge rate control of the non-spec water to be expelled from the proposed delivery conveyance pipeline. The water would be discharged into the central portion of one of the large culverts passing beneath Alta Road as it crosses O'Neill Canyon. An energy dissipater, likely consisting of concrete obstructions and directive shapes, would be constructed on the existing concrete culvert's apron footprint to ensure that the water would discharge at a rate typical of the flow rate during a rain event. The proposed outfall structure location is identified in Figure S-2.

Potential Pump Station

It is uncertain at this time if a pump station would be required to convey water to Roll Reservoir. If a pump station is necessary, a potential location has been identified near the United States-Mexico border (adjacent to the previously described metering station, northeast of the connection point). The pump station would consist of five pumps, each powered by a 600-horsepower electric motor. The pump station would have an initial capacity of 25 MGD or 17,400 gallons per minute (GPM), and an ultimate capacity of up to 50 MGD or 35,000 GPM. The potential pump station would be housed in a typical masonry structure within a fenced site, and the associated facilities would include yard piping, electrical equipment, communications equipment, and surge suppression facilities to protect the pump station and conveyance pipeline. The pump station would have a footprint of approximately 7,500 SF, and would be approximately 15 feet in height. The potential pump station location is identified in Figure S-2.

S.6 Environmental Effects/Consequences

Table S-1 summarizes potential project environmental effects or environmental consequences by alternative. Detailed discussion and analysis of project effects are provided in Chapter 3 of this Draft EIR/EIS and the associated technical studies. A discussion of the project's potential significant and unavoidable impacts, direct impacts and mitigation, and cumulative impacts and mitigation is provided below.

Under the No Action – No Project Alternative, no construction, including pipelines or related infrastructure, would occur and the project area would remain in its current condition. Therefore, the No Action – No Project Alternative would not result in any direct or cumulatively considerable effects for any of the issue areas.

Significant and Unavoidable Project Impacts

As shown in Table S-1, impacts relating to a number of issue areas would be reduced to a less than significant level after mitigation. The only issue area with potential to result in significant and unavoidable impacts after mitigation measures are implemented is greenhouse gas (GHG) emissions. As described in Chapter 3.6, Greenhouse Gas Emissions, the energy emissions estimates used to quantify the proposed project's energy usage are in all likelihood overestimates because they do not take into account implementation of the project design features (PDFs) identified in the District's WRMP Program EIR, to reduce potential environmental effects associated with energy usage from District projects. The applicable measures require high-efficiency pumps and motors, energy-efficient lighting, pump efficiency tests, and soft starts and stops to all project pumps and motors. Because these measures

would be required at the time of project design, the GHG emissions from the proposed project would likely be lower than reported in Chapter 3.6. Further, the pump station may not even be necessary. At this time, sufficient detail is not available about the design and operation of the proposed facilities to determine where energy use may be reduced, and to what extent. It should also be noted that, by using this source of water, the District would be using significantly less imported water from the State Water Project and the Colorado River, both of which use significant energy to convey the water.

Table S-1 Summary of Alternative Impacts

Issue Areas	No Action Alternative	Alternative 1		Alternative 2		Alternative 3	
		Without Mitigation	With Mitigation	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
3.1 Air Quality							
Consistency with Regional Air Quality Plans	o	LS	LS	LS	LS	LS	LS
Consistency with Air Quality Standards	o	LS	LS	LS	LS	LS	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
Sensitive Receptors	o	LS	LS	LS	LS	LS	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
Objectionable Odors	o	LS	LS	LS	LS	LS	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
3.2 Biological Resources							
Species Identified as Candidate (under the Federal or California Endangered Species Act), Sensitive, or Special Status	o	S	LS	S	LS	S	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
Riparian Habitat or Other Sensitive Natural Community	o	S	LS	S	LS	S	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
Federally Protected Wetlands	o	S	LS	S	LS	S	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
Movement of Native Resident or Migratory Fish and Wildlife	o	LS	LS	LS	LS	LS	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
Conflicts with any Local Policies or Ordinances Protecting Biological Resources or an Adopted Habitat Conservation Plan	o	LS	LS	LS	LS	LS	LS
3.3 Cultural and Paleontological Resources							
Historical Resources	o	LS	LS	LS	LS	LS	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
Archaeological Resources	o	PS	LS	PS	LS	PS	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
Paleontological Resources	o	PS	LS	PS	LS	PS	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
Human Remains	o	PS	LS	PS	LS	PS	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC

o = No impact would occur as a result of the Alternative.

CC = Cumulatively Considerable

LCC = Project would contribute to a cumulative impact, but contribution would less than Cumulatively Considerable

LS = Less Than Significant Impact

NCC = Not Cumulatively Considerable (A cumulatively considerable impact would not occur)

PS = Potentially Significant

S = Significant Impact

SU = Significant and Unavoidable Impact

Table S-1 Summary of Alternative Impacts

Issue Areas	No Action Alternative	Alternative 1		Alternative 2		Alternative 3	
		Without Mitigation	With Mitigation	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
3.4 Environmental Justice							
Disproportionate Effects on a Community <i>Cumulative</i>	<div><div></div><div></div></div>	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
3.5 Geology/Soils							
Geologic Hazards <i>Cumulative</i>	<div><div></div><div></div></div>	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
Erosion <i>Cumulative</i>	<div><div></div><div></div></div>	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
Unstable Soils <i>Cumulative</i>	<div><div></div><div></div></div>	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
Expansive Soils <i>Cumulative</i>	<div><div></div><div></div></div>	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
3.6 Greenhouse Gas Emissions							
Direct and Indirect Generation of GHG	<div><div></div></div>	SU ⁽¹⁾	SU ⁽¹⁾	SU ⁽¹⁾	SU ⁽¹⁾	SU ⁽¹⁾	SU ⁽¹⁾
Hazards Related to Climate Change	<div><div></div></div>	LS	LS	LS	LS	LS	LS
Conflict with Applicable Plan, Policy, or Regulation	<div><div></div></div>	SU ⁽¹⁾	SU ⁽¹⁾	SU ⁽¹⁾	SU ⁽¹⁾	SU ⁽¹⁾	SU ⁽¹⁾
Energy Consumption	<div><div></div></div>	LS	LS	LS	LS	LS	LS
3.7 Hazards and Hazardous Materials							
Routine Transport, Use, or Disposal of Hazardous Materials and Accidental Release of Hazardous Materials <i>Cumulative</i>	<div><div></div><div></div></div>	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
Hazards to Schools <i>Cumulative</i>	<div><div></div><div></div></div>	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
Existing Hazardous Materials Sites <i>Cumulative</i>	<div><div></div><div></div></div>	PS NCC	LS NCC	PS NCC	LS NCC	PS NCC	LS NCC
Public and Private Airport Hazards <i>Cumulative</i>	<div><div></div><div></div></div>	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
Emergency Response and Evacuation Plans <i>Cumulative</i>	<div><div></div><div></div></div>	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
Wildland Fires <i>Cumulative</i>	<div><div></div><div></div></div>	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
Project Security	<div><div></div></div>	LS	LS	LS	LS	LS	LS

⁽¹⁾ If the pump station is constructed.

o = No impact would occur as a result of the Alternative.

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LCC = Project would contribute to a cumulative impact, but contribution would less than Cumulatively Considerable

LS = Less Than Significant Impact

NCC = Not Cumulatively Considerable (A cumulatively considerable impact would not occur)

PS = Potentially Significant

S = Significant Impact

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Table S-1 Summary of Alternative Impacts

Issue Areas	No Action Alternative	Alternative 1		Alternative 2		Alternative 3	
		Without Mitigation	With Mitigation	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
3.8 Hydrology/Water Quality							
Water Quality Standards <i>Cumulative</i>	o o	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
Groundwater Supplies and Recharge <i>Cumulative</i>	o o	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
Drainage Alterations <i>Cumulative</i>	o o	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
100-Year Flood Hazards <i>Cumulative</i>	o o	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
Flooding and Inundation <i>Cumulative</i>	o o	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
3.9 Noise							
Noise Levels in Excess of Standards or Substantial Permanent Ambient Noise Increase <i>Cumulative</i>	o o	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
Excessive Groundborne Vibration or Groundborne Noise <i>Cumulative</i>	o o	LS LCC	LS LCC	LS LCC	LS LCC	LS LCC	LS LCC
Substantial Temporary or Periodic Increase in Ambient Noise <i>Cumulative</i>	o o	LS CC	LS LCC	LS CC	LS LCC	LS CC	LS LCC
Excessive Aircraft Noise <i>Cumulative</i>	o o	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
3.10 Transportation/Traffic							
Circulation System Performance <i>Cumulative</i>	o o	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
Conflict with an Applicable Congestion Management Program <i>Cumulative</i>	o o	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
Hazardous Design Features <i>Cumulative</i>	o o	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
Inadequate Emergency Access <i>Cumulative</i>	o o	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
Alternative Transportation Facilities <i>Cumulative</i>	o o	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC

o = No impact would occur as a result of the Alternative.

CC = Cumulatively Considerable

LCC = Project would contribute to a cumulative impact, but contribution would less than Cumulatively Considerable

LS = Less Than Significant Impact

NCC = Not Cumulatively Considerable (A cumulatively considerable impact would not occur)

PS = Potentially Significant

S = Significant Impact

SU = Significant and Unavoidable Impact

Direct Project Impacts and Mitigation

Mitigation measures are discussed in detail in Chapter 3. Mitigation measures are not proposed for air quality, environmental justice, geology/soils, hydrology/water quality, noise, and transportation/traffic, as potential impacts on these resources would be less than significant. Mitigation measures are required to reduce effects to biological resources, cultural and paleontological resources, and hazards and hazardous materials. Required mitigation measures will be formalized in a Mitigation Monitoring Reporting Program, as required by CEQA. For each measure, the entity responsible for mitigation will be specified. In most instances, this will be the District or a District contractor. The required timing of mitigation implementation will also be specified. The District previously prepared a PEIR for its WRMP. The WRMP includes PDFs and Standard Construction Practices (SCPs) to reduce potential environmental effects related to air quality and energy usage. While these measures are not required as mitigation measures determined necessary by the current environmental impact analysis, the PDFs and SCPs are commitments incorporated into all District projects to reduce environmental effects.

Biological Resources

Construction activities and indirect operational activities would have the potential to affect federal or state Endangered Species Act-listed candidate, sensitive, or special-status species; riparian habitat or other sensitive natural communities; and federally protected wetlands. Implementation of the mitigation measures presented in Section 3.2 would reduce potential effects to below a level of significance.

Cultural and Paleontological Resources

Construction activities would have the potential to impact unknown buried archaeological or paleontological resources, or human remains. However, implementation of the mitigation measures presented in Section 3.3 would reduce potential effects to below a level of significance.

Hazards and Hazardous Materials

Because of the historical use of agriculture within the proposed project area, there is potential for the project area to be affected with pesticides or other chemicals used routinely in agricultural production. With implementation of the mitigation measure presented in Section 3.7, effects related to the exposure of persons to agricultural pesticides would be less than significant.

Cumulative Project Effects and Mitigation

Cumulative effects are discussed in detail in Chapter 4. Alternatives 1, 2, and 3 would not result in any cumulatively considerable effects for air quality, biological resources, cultural and paleontological resources, environmental justice, geology/soils, hazards and hazardous materials, hydrology/water quality, or transportation/traffic. Cumulatively considerable, as defined in CEQA Section 15065(a)(3), “means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.” Section 15130(a) clarifies that when a project’s incremental effect is not cumulatively considerable, “a lead agency need not consider that effect significant, but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable.” The only resource areas resulting in potential cumulative effects are GHG emissions (discussed in Chapter 1.6.1) and noise. Substantial temporary increases in ambient noise would be cumulatively considerable.

Implementation of the mitigation measures detailed in this document, however, would reduce the overall cumulative effect to be less than cumulatively considerable.

S.7 Potentially Required Federal, State, and Local Actions, Permits, or Entitlements

Permits and Approvals

The permits and approvals that federal, state, and local agencies or organizations would require to implement the proposed project are summarized below in Table S-2. These requirements are necessary to complete the environmental review process, and to obtain approval before the proposed project can be initiated.

Table S-2 Potentially Required Federal, State, and Local Actions, Permits or Entitlements	
Agency or Organization	Actions, Permits, and/or Entitlements
<i>Federal</i>	
U.S. Department of State	Presidential Permit/National Interest Determination ¹
	<ul style="list-style-type: none"> Preparation of an EIS consistent with NEPA
	<ul style="list-style-type: none"> Consultation for Section 106 of the National Historic Preservation Act (NHPA)
	<ul style="list-style-type: none"> International Boundary and Water Commission Consultation
	<ul style="list-style-type: none"> Consultation for Section 7 of the Endangered Species Act
U.S. Army Corps of Engineers (USACE)	<ul style="list-style-type: none"> Section 404 – Nationwide Permit (#12)
U.S. Fish & Wildlife Service (USFWS)	<ul style="list-style-type: none"> Endangered Species Act Section 7 Consultation
U.S. Environmental Protection Agency (EPA)	<ul style="list-style-type: none"> Review of EIS under Clean Air Act
<i>State</i>	
California Department of Fish and Wildlife (CDFW)	Section 1601 Streambed Alteration Agreement
California Department of Public Health (CDPH)	Domestic Water Supply Permit Amendment
California State Water Resources Control Board (SWRCB)	Coverage under National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity
Regional Water Quality Control Board, San Diego Region (RWQCB)	401 Certification Letter or Waiver
	NPDES General Permit - Discharges of Hydrostatic Test Water and Potable Water
<i>Local</i>	
Otay Water District	Approval and Certification of an EIR per CEQA
San Diego County Department of Public Works (County)	Encroachment Permit for installation of pipelines in, under or over any portion of County road rights-of-way
San Diego Gas & Electric Company (SDG&E)	Permission to Grade Letter and Joint Use Agreement
Miscellaneous Utility Companies (SDG&E, AT&T, Sprint, Cox Communications)	Encroachment Permit if utility companies have prior right
CPN Pipeline Company	Conflict Review

¹ Documents bulleted below the Presidential Permit action are listed as part of the permit application consideration process.

Presidential Permit

Executive Order 11423 requires the Department to determine whether the issuance of a new Presidential Permit for a water supply pipeline would serve the national interest. The determination process involves consideration of many factors, which can include foreign policy; environmental, cultural, and economic impacts; compliance with applicable law and policy; and other issues. This environmental review is part of the Department's review of the Otay Water District's application.

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Chapter 1 INTRODUCTION/PURPOSE AND NEED

1.1 Introduction

The Otay Water District (District) and the U.S. Department of State (the Department) jointly prepared this draft environmental document pursuant to the California Environmental Quality Act (CEQA) (California Public Resources Code (PRC) Section 21000 *et seq.*) and consistent with the National Environmental Policy Act of 1969, as amended (NEPA); the Council on Environmental Quality (CEQ) Regulations (Title 40 Code of Federal Regulations [CFR] Parts 1500–1508); and the Department’s implementing regulations (22 CFR Part 161). The guidelines for federal and state environmental legal regimes both allow for the preparation of “joint” documents. The appropriate level of CEQA documentation is an Environmental Impact Report (EIR) and the appropriate NEPA document is an Environmental Impact Statement (EIS). Therefore, the joint document is referred to as an “EIR/EIS.” The Draft EIR/EIS will evaluate the potential environmental effects of construction and operation of the Otay Mesa Conveyance and Disinfection System Project (proposed project), which includes the construction of a steel potable water pipeline and other infrastructure improvements necessary to convey desalinated seawater produced in Mexico from the United States-Mexico international border into the District’s service area in southern San Diego County, California. The scope of the proposed project for the purpose of environmental review pursuant to CEQA and consistent with NEPA is limited to the facilities within the jurisdiction of the United States. The scope does not include the proposed desalination plant in Rosarito, Mexico, or associated potable water pipeline and other related infrastructure in Mexico.

This Draft EIR/EIS describes the potential short-term, long-term, direct, indirect, and cumulative environmental effects that would occur from project implementation, and discusses the potential environmental consequences associated with the proposed project. This section describes the project background, lead agencies, discretionary actions, purpose and need, CEQA project objectives, intended use of the EIR/EIS, draft EIR/EIS preparation, and permits and approvals that would be required to implement the proposed project.

1.2 Background

1.2.1 Otay Water District Water Resources Master Plan

In 2009, the District updated its comprehensive Water Resources Master Plan (WRMP), which identified the capital facilities required to provide potable and recycled water supplies to meet approved land use development plans and growth projections within the planning area, consistent with the San Diego Association of Government (SANDAG) forecasts through 2030. The 2009 WRMP also identified the need for the District to expand or offset local water supply resources in an effort to decrease dependence on water supplies imported from the State Water Project or from the Colorado River. This is primarily in

response to the water supply issues related to the Sacramento-San Joaquin Delta and the ongoing drought conditions in the western states, and to address the rising costs of imported water from the Colorado River and Northern California. In response to this, the District identified a number of potential new local and regional water supply and offset projects, one of which included the proposed project, in an effort to help improve system reliability and flexibility throughout the District's service area.

As part of the 2009 WRMP, the District prepared the 2009 WRMP Program EIR (PEIR) (SCH# 2008101127). The District Board of Directors certified the PEIR on February 3, 2010, alongside the approval of the WRMP as a final plan document. The intent of the PEIR was to guide subsequent environmental evaluations of individual Capital Improvement Program (CIP) projects included in the 2009 WRMP Update and to streamline subsequent detailed project-specific environmental evaluations. The PEIR addresses the potential environmental effects of construction and operation of the individual CIP projects, including the proposed project. The PEIR identified project design features (PDFs) and Standard Construction Practices (SCPs) to reduce potential environmental effects that would result from the covered CIP projects, including the proposed project. These PDFs and SCPs are incorporated by reference into the EIR/EIS for the proposed project. As such, the preparation of this Draft EIR/EIS is consistent with the intent of the WRMP and associated PEIR.

1.2.2 Rosarito Seawater Desalination Facility

The desalination plant in Mexico would be constructed through a Public-Private Partnership in Rosarito Beach, Baja California, Mexico, under the Asociaciones Público Privadas laws. The new 100 million gallons per day (MGD) seawater desalination plant would be collocated with the existing Presidente Juárez electrical generating facility, and cooling water effluent from the power plant would be used as the influent to the desalination plant. The District is exploring options for the initial purchase of approximately 20 MGD of desalinated seawater. The treated desalinated seawater would be conveyed from the Rosarito plant to the United States-Mexico border via an approximately 27-mile-long proposed new potable water pipeline (Figure 1-1). The proposed new potable water pipeline would extend east from the Rosarito plant and then turn northwest to the US-Mexico border where the connection to the District's conveyance pipeline would be made. (Figure 1-2) The connection point at the US-Mexico border would be located just east of the proposed Otay Mesa East Port of Entry (POE).

The water purchase agreement would be between the District and the State of Baja California in conjunction with the International Boundary and Water Commission. The agreement would include a water quality specification that lists the maximum allowable levels of constituents in the water. The State Water Resources Control Board (SWRCB) Division of Drinking Water is responsible for approving the final specification. The company chosen to build the plant will design processes at the desalination plant in Mexico to meet or exceed the specification. These processes would include pre-treatment, reverse osmosis membrane treatment, post-treatment conditioning, and disinfection.

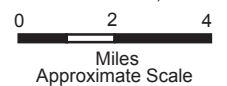
The District is not involved in the planning, design, construction, operation, or maintenance of any proposed or existing facilities in Mexico. The proposed Mexican desalination plant and associated facilities are not dependent upon the proposed project and will be constructed regardless of whether the proposed project is approved. The District's involvement in the proposed project would begin at the United States-Mexico border. Chapter 2 provides a detailed description of the proposed pipeline and facilities in the United States.



FIGURE 1-1
Regional Location

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Source: AECOM, 2015



Otay Mesa Conveyance and Disinfection System Project



FIGURE 1-2
Rosarito Desalination Plant and Connecting Pipelines

Source: AECOM, 2015

100032058

Otay Mesa Conveyance and Disinfection System Project

1.3 Lead Agencies

The District and the Department signed a Memorandum of Understanding (MOU) on September 11, 2014, for the preparation of a joint EIR/EIS for the proposed project (Appendix A). The MOU memorializes the commitments among the participants to work collaboratively in preparation of the document to support the Department Presidential Permitting process by conducting a review consistent with NEPA, and to meet the District's CEQA obligations for the proposed project. The MOU clarifies and defines the roles and responsibilities of the District and the Department as joint lead agencies in preparing the EIR/EIS as part of a single environmental review process that meets applicable requirements.

1.4 Purpose and Need/Project Objectives

Need

The District currently receives its imported water supply through the San Diego County Water Authority (SDCWA) aqueducts and through joint use agreements with Helix Water District. SDCWA planning documents identify a need to diversify the region's water supplies in response to drought, seismic risk, and increasing demand for potable water originating from the Colorado River and the State Water Project (SDCWA 2014, 2010). As a member agency of the SDCWA, the District needs to diversify its long-term potable water supply portfolio to decrease dependence on the current, overextended water supplies from the State Water Project and overallocated water supplies from the Colorado River, and to help meet demands within the District's service area and the region.

Purpose

The purpose of the proposed project is to provide for the conveyance of desalinated seawater, originating at a proposed desalination plant in Rosarito, Mexico, from the United States-Mexico border into the District service area. The increased flexibility provided by the proposed project would increase the reliability of the District's ability to deliver water by providing an alternative supply source to SDCWA, including in the event of reduced availability or diminished supplies from other source, or a shut-down of one or more SDCWA aqueducts; rising prices; or both.

CEQA Project Objectives

In addition to the purpose and need for the proposed federal action described above, the District developed the following project objectives in accordance with CEQA for the proposed project:

- Maximize the District's operational effectiveness and system reliability to meet planned future water supply needs within its service area;
- Provide system flexibility in the event of a planned or unplanned operational interruption;
- Provide potable water that meets the requirements of the SWRCB Division of Drinking Water for domestic drinking water;
- Implement the proposed project in accordance with the District's CIP and the WRMP; and
- Reduce effects on sensitive environmental resources located in the project area.

1.5 Intended Use of the EIR/EIS

The intended uses of this Draft EIR/EIS are to (1) inform decision makers and the public about any potentially significant environmental effects of the proposed activities; (2) identify the ways that environmental damage can be avoided or reduced; (3) prevent significant, avoidable damage to the environment by requiring changes to the proposed project through the use of approved alternatives or mitigation measures; and (4) disclose to the public the reasons why one or both agencies might approve the proposed project if significant environmental effects are involved (CEQA Guidelines Section 15002; PRC Section 21002.1).

1.6 Draft EIR/EIS Preparation

The District and the Department employed the assistance of a third-party contractor to assist in preparation of this Draft EIR/EIS. The content of the document is under the sole control and direction of the District and the Department.

1.6.1 CEQA/NEPA Regulations

The Department has chosen to prepare an EIS as part of its review of the proposed project to allow desalinated seawater to be conveyed from the United States-Mexico border into the District service area, consistent with:

- NEPA of 1969, as amended (Pub. L. 91-190, 42 U.S. Code [U.S.C.] 4321-4347, January 1, 1970, as amended by Pub. L. 94-52, July 3, 1975, and Pub. L. 94-83, August 9, 1975); and
- CEQ, Executive Office of the President, Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500-1508).
- Department of State regulations, 22 CFR Part 161.

The District's approval of the proposed project constitutes a discretionary action requiring the preparation of an EIR as stipulated by CEQA. Specifically:

- The criteria, standards, and procedures of CEQA (PRC Section 21000 *et seq.*); and
- CEQA Guidelines (California Administrative Code, Section 15000, *et seq.* and Article 14, Projects Also Subject to NEPA, Sections 15220 to 15229).

The CEQ provides guidance on integrating federal and state environmental reviews in a handbook published in February 2014. NEPA and CEQA are similar, both in intent and review process (the analyses, public engagement, and document preparation). Both statutory schemes allow for a joint federal and state review where a project requires both federal and state approvals. A joint review process can avoid redundancy, improve efficiency and interagency cooperation, and be easier for applicants and the public to navigate.

1.6.2 Scoping

The scoping process ensures that the environmental concerns of individuals, organizations, and agencies regarding a proposed project are adequately addressed within the project's environmental document. Scoping is an integral part of the NEPA and CEQA processes because it allows interested parties to

participate directly in the preparation of an environmental document, and to identify significant environmental effects and alternatives.

The District issued a joint Notice of Preparation (NOP)/Notice of Intent (NOI) consistent with NEPA and CEQA. The NOP/NOI was distributed through direct mailings and was published as a legal notice in the San Diego Daily Transcript and the San Diego Union Tribune on November 14, 2014. The Department published the NOP/NOI in the Federal Register to notify the public that a Draft EIR/EIS will be prepared and considered for the proposed alternatives, and of the proposed scoping process. The 30-day public review period for the NOP/NOI ended on December 13, 2014, and nine comment letters were received from other agencies and the public during the NOP/NOI public scoping period.

A public scoping meeting was held at the District's office located at 2554 Sweetwater Springs Boulevard, Spring Valley, CA 91978 on December 2, 2014, at 5:00 p.m. The meeting was designed to provide the public and governmental agencies with information on the proposed alternatives, as well as the NEPA/CEQA processes, and to give attendees an opportunity to identify environmental issues and alternatives that should be considered in the Draft EIR/EIS. Comment letters could be sent to the District during the 30-day NOP/NOI public scoping period by no later than December 13, 2014, or left with District staff at the scoping meeting to ensure that any concerns expressed could be addressed in the Draft EIR/EIS. No attendees were present at the scoping meeting, and no comment forms were completed and submitted to District staff at the scoping meeting or received by mail after the meeting.

1.6.3 Draft EIR/EIS Public Review, Agency, and Public Participation

The Draft EIR/EIS will be circulated for a 45-day public review and comment period. Responsible agencies, trustee agencies, cooperating agencies, Indian tribes, and interested organizations and individuals can provide written comments on the document during this review period. As defined in the CEQA Guidelines, "responsible agencies" are those that have discretionary approval over the proposed project, in addition to the lead agency, and "trustee agencies" are those that have jurisdiction by law over natural resources affected by implementation of the proposed project, which are held in trust for the people of the State of California. Responsible agencies that have discretionary approvals associated with the proposed project include the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and County of San Diego (County). The California Department of Fish and Wildlife (CDFW) is a trustee agency. As defined in NEPA practice, a "cooperating agency" is any federal agency, other than the lead agency, that has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposed project. No cooperating agencies have been identified for the proposed project. Refer to Table 1-1 for a list of discretionary actions and permits required for the proposed project.

Comments can also be submitted on www.regulations.gov by searching for the title of this Draft EIR/EIS.

The District and the Department will receive written comments at the following addresses:

Lisa Coburn-Boyd
Otay Water District
2554 Sweetwater Springs Boulevard
Spring Valley, CA 91978-2004
Phone: (619) 670-2219 Fax: (619) 670-8920
E-mail: lisa.coburn-boyd@otaywater.gov

Jill Reilly
U.S. Department of State, Bureau of Oceans
and International Environmental and Scientific Affairs,
Office of Environmental Quality and
Transboundary Issues
2201 C Street, NW, Suite 2727
Washington, DC 20520

Copies of the Draft EIR/EIS are available to the public for review at the addresses above, at the District website at www.otaywater.gov, at the Department of State website at www.state.gov <http://www.state.gov/p/wha/rt/permit/app/otaypermit/index.htm>, and at the following public libraries:

- City of San Diego Public Library, San Ysidro Branch Library, 101 West San Ysidro Boulevard, San Diego, CA 92173
- City of San Diego Public Library, Otay Mesa-Nestor Branch Library, 3003 Coronado Avenue, San Diego, CA 92154
- City of Chula Vista Public Library, Otay Ranch Branch, 2015 Birch Road, Suite 409, Chula Vista, CA 91915

1.6.4 Prior Environmental Evaluations and Support Documents

Environmental Evaluations

The District used the Feasibility Study of Seawater Desalination Development Opportunities for the San Diego/Tijuana Region Final Report (SDCWA 2005) to help create and support the goals and objectives of the proposed project. In addition, the District prepared the Otay Water District WRMP and associated PEIR (2010b), which is incorporated by reference. The District also prepared the Rosarito Desalination Facility Conveyance and Disinfection System Project Report (2010). The District's environmental evaluations also reflected the State Route 11 and the Otay Mesa East POE EIR/EIS (Caltrans 2010), the Otay Crossings Commerce Park Draft Supplemental EIR (Helix 2010), the East Otay Mesa Specific Plan (County of San Diego 2010), and the Otay Business Park Supplemental EIR (T&B Planning Consultants 2010). Mexico's environmental documents prepared for the facilities located south of the United States-Mexico border were also used.

Support Documents

In addition to the environmental evaluations mentioned above, conceptual design of the proposed project and formulation of alternatives for preparation of the Draft EIR/EIS were supported by numerous technical documents. These include:

- Analysis of biological resources (AECOM 2015)
- Assessment of cultural resources (Atkins 2015b)
- Air quality and greenhouse gas evaluation (Atkins 2015a)
- Preliminary Geotechnical Evaluation (Geocon 2015a)
- Noise and vibration analysis (Atkins 2015c)
- Phase I Environmental Site Assessment (ESA) (Geocon 2015b)
- Traffic Impact Study (VRPA 2014)
- Water Quality Evaluation (Atkins 2015d)

The environmental evaluations were completed in coordination with the State Historic Preservation Officer (SHPO) and local Indian tribes with information about the cultural sensitivity of the area.

1.6.5 Environmental Review of the Mexican Facilities for the Project

As described previously, the desalinated water for the proposed project would be produced at the proposed Rosarito Desalination plant. This plant is to be constructed directly adjacent to an existing electrical generating facility, the Presidente Juárez power plant located in the central portion of Rosarito in Baja California del Norte. Cooling water effluent from the power plant would be used as the influent to the desalination plant. A pipeline would be built to convey the treated water from the desalination plant to the Tank 3 distribution point operated by the Tijuana Public Utility (CESPT) agency northeast of Rosarito. At this point, a portion of the desalinated water would be distributed to users in Mexico. A second pipeline to be built would convey the remaining portion of desalinated water to the United States-Mexico border where the connection to the District's conveyance pipeline would be made. An environmental review of the three components of the project in Mexico was completed in 2014 and is presented in the following documents:

- 2014a. Cisco Consultoría Ambiental – Planta Desalinizadora, Rosarito, B.C.
- 2014b. Cisco Consultoría Ambiental – Acueducto Rosarito – El Florido
- 2014c. Cisco Consultoría Ambiental – Acueducto El Florido – Otay

These environmental documents are each a Manifestación de Impacto Ambiental (MIA). MIAs are generally considered the equivalent of environmental impact statements in the United States, and, as such, describe the environmental effects and proposed measures to avoid or minimize effects associated with the construction and operation of each project component.

1.7 Required Permits and Approvals

The permits and approvals that would be required to implement the proposed project are summarized below in Table 1-1 for federal, state, and local agencies, Indian tribes, or organizations. These requirements are necessary to complete the environmental review process, and to obtain approval before the proposed project can be initiated.

Table 1-1 Potential Federal, State, and Local Actions, Permits, or Entitlements

Agency or Organization	Actions, Permits, and/or Entitlements
<i>Federal</i>	
U.S. Department of State	Presidential Permit/National Interest Determination
	<ul style="list-style-type: none"> Preparation of an EIS consistent with NEPA
	<ul style="list-style-type: none"> Consultation under Section 106 of the National Historic Preservation Act (NHPA)
	<ul style="list-style-type: none"> International Boundary and Water Commission Consultation
U.S. Army Corps of Engineers (USACE)	<ul style="list-style-type: none"> Consultation for Section 7 of the Endangered Species Act
U.S. Fish & Wildlife Service (USFWS)	<ul style="list-style-type: none"> Section 404 – Nationwide Permit (#12)
U.S. Environmental Protection Agency (EPA)	<ul style="list-style-type: none"> Section 7 Consultation
	<ul style="list-style-type: none"> Review of EIS under Clean Air Act
<i>State</i>	
California Department of Fish and Wildlife (CDFW)	Section 1601 Streambed Alteration Agreement
California Department of Public Health (CDPH)	Domestic Water Supply Permit Amendment

Table 1-1 Potential Federal, State, and Local Actions, Permits, or Entitlements

Agency or Organization	Actions, Permits, and/or Entitlements
California State Water Resources Control Board (SWRCB)	Coverage under National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity
Regional Water Quality Control Board, San Diego Region (RWQCB)	401 Certification Letter or Waiver
	NPDES General Permit - Discharges of Hydrostatic Test Water and Potable Water
<i>Local</i>	
Otay Water District	Approval and Certification of an EIR per CEQA
San Diego County Department of Public Works (County)	Encroachment Permit for installation of pipelines in, under or over any portion of County road rights-of-way
San Diego Gas & Electric Company (SDG&E)	Permission to Grade Letter and Joint Use Agreement
Miscellaneous Utility Companies (SDG&E, AT&T, Sprint, Cox Communications)	Encroachment Permit if utility companies have prior right
CPN Pipeline Company	Conflict Review

¹ Documents bulleted below the Presidential Permit action are listed as part of the permit application consideration process.

1.7.1 Presidential Permit

The Presidential Permit process began with the District's submission of an application on November 25, 2013. Executive Order 11423 requires the Department to determine whether the issuance of a new Presidential Permit for a water supply pipeline would serve the national interest. The determination process involves consideration of many factors, which can include foreign policy; environmental, cultural, and economic impacts; compliance with relevant federal regulations; and other issues, and takes into account input from appropriate federal agencies and other interested participants. The findings of the Final EIR/EIS will be an input into that determination. The Department will issue the Presidential Permit if it is determined that the proposed project will serve the national interest.

Chapter 2 **DESCRIPTION OF PROPOSED ALTERNATIVES**

2.1 Introduction

This chapter describes the proposed alternatives of the proposed Otay Mesa Conveyance and Disinfection System Project (proposed project), including the No Action Alternative. It also discusses alternatives initially considered but eliminated from further consideration. The proposed alternatives were developed through the process described below.

2.2 Proposed Project

The proposed project involves the construction and operation of an approximately four-mile-long, 48 to 54-inch-diameter (not yet determined) potable water pipeline, and a metering station within the Otay Mesa area of the County of San Diego just north of the United States-Mexico international border. Additionally, a pump station and/or disinfection facility may be constructed if needed.

The proposed project would enable the District to import and convey desalinated seawater from a connection point at the United States-Mexico border north to the District's existing Roll Reservoir. The proposed Mexican desalination plant is envisioned to produce 100 million gallons per day (MGD) of desalinated seawater. The District intends to initially purchase approximately 20–25 MGD of desalinated seawater, and ultimately increase the amount to 50 MGD. Because of seasonal variation in the District's demand, the District anticipates that 10 MGD would be conveyed in the winter months, and up to 50 MGD would be conveyed during peak demand periods in the summer months. The water production at the desalination plant in Mexico would not be affected by the District's changes in seasonal demand. Numerous conveyance pipeline alignment alternatives were considered; however, after initial consideration of environmental and engineering opportunities and constraints, the District has chosen three alignment alternatives considered the most feasible, and will address those in the Draft EIR/EIS.

The District will be responsible for approving the expenditure of public funds for the proposed project. The Department will be responsible for determining whether the proposed project serves the U.S. national interest pursuant to Executive Order (EO) 11423, and if so, issuing a Presidential Permit authorizing the construction, connection, operation, and maintenance of the cross-border pipeline facility.

2.3 Alignment Alternative Selection

The process designed to develop preferred alignment alternatives for the conveyance system included identification, coarse screening, analysis, and fine screening of alignment alternatives. Considerations in this process included public and private properties, agency boundaries, existing and planned roadways,

land use, topography, Geographic Information System (GIS) mapping for plan view analysis and profile view analysis, right-of-way easements, traffic assessments, tunnel investigations, hydraulic analysis, permits and approval processes, existing utilities, and potential conflicts. Environmental effects were also a major consideration of the evaluation process, including the coordination and support required to document environmental work in support of the Draft EIR/EIS. Consideration of these effects led to the evaluation of conveyance pipeline alignment alternatives primarily within existing or proposed roadways and utility rights-of-way. Ultimately, three conveyance pipeline alignment alternatives were selected for detailed analysis in the Draft EIR/EIS (see Section 2.4 below). Each of these include additional infrastructure, as described in Section 2.5 below. The additional alignment segments that were considered during the screening process are discussed in Section 2.10 below.

2.4 Conveyance Pipeline Alignment Alternatives

Three conveyance pipeline alignment alternatives, beginning at the United States-Mexico border and ending at the District's existing Roll Reservoir (a covered water storage facility), have been identified. The alignment of each alternative is described from south to north below. All three alignment alternatives begin at the United States-Mexico border, approximately 300 linear feet (LF) east of the existing SDG&E power transmission lines and easement. This point is the location of the pipeline terminus in Mexico. The three alignments start at the same location, then diverge for approximately 4,000 LF, then merge again and follow the same alignment (referred to as the "common segment") for approximately 17,740 LF ending at Roll Reservoir. Figure 2-1 identifies the three proposed conveyance pipeline alignment alternatives and additional infrastructure locations.

To avoid repetition, the common segment is only discussed under Alignment Alternative 1. The Alignment Alternatives 2 and 3 discussions refer back to the Alignment Alternative 1 discussion to address the common segment.

2.4.1 Proposed Alignment Alternative 1

Alignment Alternative 1 (herein referred to as Alternative 1) would consist of a proposed route for the steel potable water conveyance pipeline with a length of approximately 21,810 LF. The proposed conveyance pipeline would begin at the United States-Mexico border connection point approximately 300 LF east of the SDG&E power transmission lines and easement and continue northwesterly for approximately 570 LF before turning approximately 90 degrees southwesterly for approximately 610 LF along an unpaved dirt road. It would then turn northwest again at approximately 90 degrees and follow a dirt road for approximately 2,890 LF around a curve and a sharp right turn, slightly east of the connection with the future alignment of Lone Star Road. This would be the beginning of the "common segment." From that connection, the proposed conveyance pipeline would continue along and within the right-of-way of future Lone Star Road for approximately 4,210 LF until it reached the existing, paved portion of Paseo de la Fuente (southerly cul-de-sac). The proposed conveyance pipeline would then continue along and within the paved Paseo de la Fuente roadway for approximately 2,870 LF until it reached the intersection with Alta Road. From the intersection of Alta Road and Paseo de la Fuente, the proposed conveyance pipeline would continue north for approximately 8,660 LF in the paved roadway to an existing dirt roadway that provides access to Roll Reservoir. The proposed conveyance pipeline would continue in the dirt roadway for approximately 2,000 LF and terminate on the eastern side of Roll Reservoir.

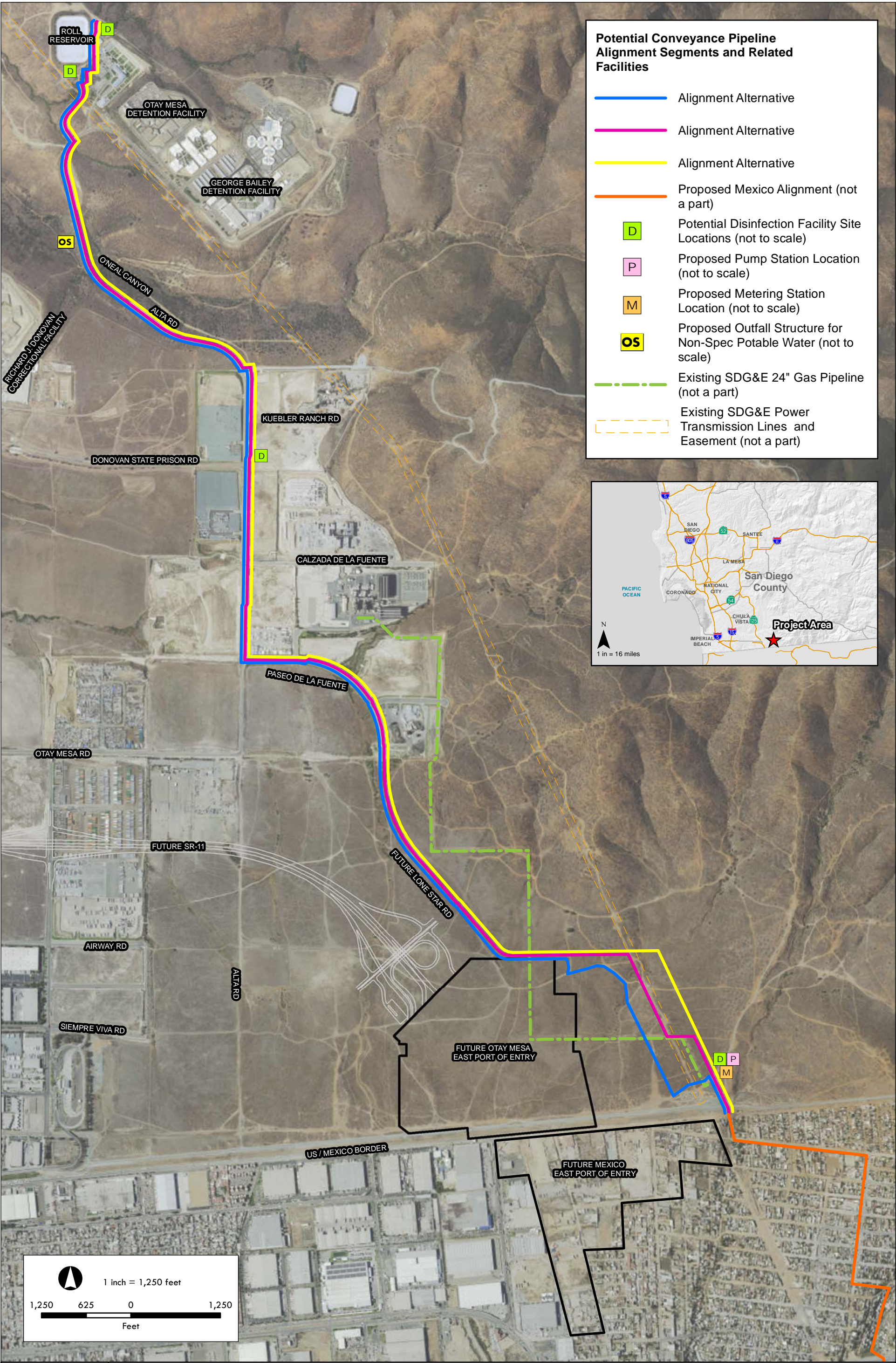


FIGURE 2-1
Proposed Alternatives
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Source: Atkins, 2014; San Diego County GIS, 2012; ESRI, 2014

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2.4.2 Proposed Alignment Alternative 2

Alignment Alternative 2 (herein referred to as Alternative 2) would consist of a proposed route for the steel potable water conveyance pipeline with a length of approximately 21,400 LF. The proposed conveyance pipeline would begin at the United States-Mexico border connection point and continue northwesterly parallel to the eastern edge of the existing SDG&E power transmission lines and easement for approximately 1,180 LF. At this point, the proposed conveyance pipeline would cross beneath the existing SDG&E power transmission lines and easement and continue due west for approximately 380 LF. The proposed conveyance pipeline would then turn to the northwest for approximately 1,270 LF, before turning due west for approximately 840 LF to the point where all three proposed alignment alternatives join, which is approximately 550 LF east of the existing SDG&E 24-inch gas pipeline. From this point, the alignment alternative would join the common segment until its termination point at Roll Reservoir.

2.4.3 Proposed Alignment Alternative 3

Alignment Alternative 3 (herein referred to as Alternative 3) would consist of a proposed route for the steel potable water conveyance pipeline with a length of approximately 22,580 LF. The proposed conveyance pipeline would begin at the United States-Mexico border connection point and continue northwesterly parallel to the eastern edge of the existing SDG&E power transmission lines and easement for approximately 2,450 LF. It would then turn due west, crossing beneath the SDG&E power transmission lines and easement, and continue for approximately 1,220 LF, until it is approximately 550 LF east of the existing SDG&E 24-inch gas pipeline. From this point, the alignment alternative would join the common segment until its termination point at Roll Reservoir.

2.5 Additional Project Infrastructure

2.5.1 Metering Station

The proposed project includes a metering station near the United States-Mexico border, slightly north of the connection point. The metering station would have a footprint of no more than approximately 1,000 square feet (SF) and would be located directly in-line or adjacent to the east side of the proposed conveyance pipeline. A check valve or backflow prevention device would be included downstream of the flow meter to prevent reversal of flow. The metering station would likely consist of a below-grade concrete vault with an above-grade masonry structure. The metering station location is identified in Figure 2-1.

2.5.2 Potential Disinfection Facility

The proposed project includes a disinfection facility at one of four potential locations along the conveyance pipeline alignment alternatives. One potential location is at the United States-Mexico border, adjacent to the metering station. A second potential location is adjacent to the proposed conveyance pipeline (along the common segment) in an existing disturbed area just east of Alta Road, near the intersection of Alta Road and Donovan State Prison Road. Two additional potential locations are on the southern and northeastern perimeters of Roll Reservoir. The preferred location would be chosen during preliminary design. The potential disinfection facility would be enclosed in a masonry structure, and would have a footprint of approximately 37,500 SF. The structure would be

approximately 30 feet in height, with an additional 500 SF electrical site to power the facility. In addition, the potential disinfection facility would include exterior lighting consisting of six, 50-watt high-pressure sodium (HPS) lights on 25-foot poles, and four, 50-watt HPS wall pack lights on the sides of the facility. All lighting would be motion sensitive rather than steady burning, and would be downcast and shielded to keep light within the footprint of the potential disinfection facility. Landscaping includes drought-tolerant California native species for erosion control on slopes. The four potential disinfection facility locations are identified in Figure 2-1.

2.5.3 Outfall Structure for Non-Specification Potable Water

The District expects that the quality of water purchased, delivered, and received by the District would be consistent and within the terms of the Water Purchase Agreement (terms yet to be agreed upon), but under circumstances where the product water specifications (including those various regulatory requirements) are not met, the District would not purchase or accept such water. Through monitoring at the desalination plant, various locations along the Mexican conveyance pipeline, and just north of the United States-Mexico border, the District would have the ability to confirm that the quality of water is consistent with their negotiated water quality specifications ("spec water"). The District would sample the water quality after notification of non-spec water conditions to confirm the information and avoid discharging and wasting potable water. The water quality monitoring equipment and instruments used to test the water would be calibrated regularly in accordance with the manufacturer's recommendations. Non-spec water conditions are not anticipated and would be an extremely infrequent event. In the very rare instance where the monitoring equipment and instruments notify the District that the water quality is outside the terms of the Water Purchase Agreement, the District would off-load/divert such non-spec water by means of an outfall structure into the drainage in O'Neal Canyon. The outfall structure would be located along Alta Road south of the District's Roll Reservoir. The outfall structure would be incorporated into the triple culvert that conveys storm flows under and through the Alta Road berm crossing O'Neal Canyon. The three parallel culverts have 10-foot by 9-foot openings and are 500 feet in length.

The outfall structure would consist of pipeline "T" fittings and a valve configuration that allows both insulation and discharge rate control of the non-spec water to be expelled from delivery. The outfall structure would discharge through the top section into the central portion of one of the culverts. An energy dissipater, likely consisting of concrete obstructions and directive shapes, would be constructed on the downstream end of the existing concrete culvert's footprint to ensure that the water would be discharged at a rate typical of the flow rate during a rain event. The proposed outfall structure location is identified in Figure 2-1.

Discharges from drinking water systems to surface waters in California are subject to waste discharge requirements set forth by the SWRCB. Given the infrequent nature of this activity, non-spec water discharges into O'Neal Canyon would be permitted under the Statewide National Pollutant Discharge Elimination System (NPDES) Permit for Drinking Water System Discharges to waters of the U.S. The District obtained coverage under this permit. The water must meet receiving water standards and be de-chlorinated prior to discharge, and also not cause erosion. At the outfall structure, erosion would be avoided through use of the control valve assembly and energy dissipater configuration described above. The District would submit project plans and water quality specifications to the SWRCB for their review.

2.5.4 Potential Pump Station

It is uncertain at this time if a District pump station would be required to convey water to Roll Reservoir. If the water is delivered to the United States-Mexico border with a hydraulic grade line (HGL) of approximately 800 feet or more (for sufficient pressure), then a pump station would not be required. If the required pressure is not provided (terms yet to be agreed upon in the Water Purchase Agreement), then a pump station would likely be required. If a pump station is necessary, a potential location has been identified near the United States-Mexico border (adjacent to the previously described metering station, northeast of the connection point). The potential pump station would consist of five pumps, each powered by a 600-horsepower electric motor, and would have an initial capacity of 25 MGD or 17,400 gallons per minute (GPM), and an ultimate capacity of up to 50 MGD or 35,000 GPM. The potential pump station would be housed in a masonry structure within a fenced site, and the associated facilities would include yard piping, electrical equipment, communications equipment, and surge suppression facilities to protect the pump station and conveyance pipeline. The pump station would have a footprint of approximately 7,500 SF, and an approximate height of 15 feet. In addition, the pump station would include exterior lighting similar to the disinfection facility. Landscaping would be similar to that described for the disinfection facility. The potential pump station location is identified in Figure 2-1.

2.6 Construction Methods

2.6.1 Conveyance Pipeline

The proposed conveyance pipeline, regardless of the selected alignment alternative, would be constructed using open-trench methods. Trenches would be approximately 10 feet deep and approximately 10 feet wide when the installation is within existing paved streets (trenches would be shored). When installation is outside of paved roadways, the trenches would be approximately 10 feet deep and approximately 30 feet wide (trench walls would be sloped). An excavator would be used to dig the trenches and load excavated materials into a truck. If existing adjacent, developed, or disturbed rights-of-way allow, temporary stockpiling may occur adjacent to the trench. Stockpiling will not occur in undisturbed areas. Based on an average trenching distance of approximately 120 feet per eight-hour work day, the construction period for the proposed conveyance pipeline is approximately 9 to 10 months. Standard equipment, including excavators, backhoes, trucks, and air compressors, would be used for construction of the proposed conveyance pipeline. During construction, approximately 26,000 cubic yards of material would be exported and 8,000 cubic yards imported. A total of 34 one-way truck trips (i.e., 17 roundtrips) would be required per day during construction. Approximately 12 daily construction workers would be required for construction of the proposed conveyance pipeline. Up to an additional 12 workers would be at times required for the construction of additional project infrastructure described below.

Depending on the location of the construction activities, the type of equipment used, the depth of the trenches, and the proximity to existing infrastructure, construction would result in a temporary disturbance area between 30 to 210 feet wide. Temporary disturbances are short-term in nature, typically occurring during the construction phase of a project, and do not permanently affect the environment.

Temporary disturbance areas associated with the proposed conveyance pipeline begin at the United States-Mexico border and follow undeveloped areas, dirt roads, and/or the SDG&E easement (depending on the alignment alternative) to the southern terminus of future Lone Star Road. This area

of the temporary disturbances includes rough grading and earth work. The undeveloped areas, dirt roads, and/or SDG&E easement would be revegetated and returned to the same condition as prior to construction. In addition, temporary disturbance begins in the paved portion of Paseo de la Fuente and follows Alta Road to Roll Reservoir. The paved portion of Paseo de la Fuente and Alta Road would be trenched, re-paved, and returned to the pre-project condition after construction is finished.

Permanent disturbances are long term, exist after construction, and have a permanent effect on the environment. Permanent disturbance areas associated with the proposed conveyance pipeline include partial and primitive construction of the future extension of Lone Star Road (rough grading and earthwork only). To be conservative, analysis assumes the proposed project would be constructed prior to other approved developments in the area (specifically the Otay Crossings Commerce Park project), and would improve the portion of future Lone Star Road to its ultimate grade prior to installation of the proposed conveyance pipeline. After the proposed conveyance pipeline installation, the future roadway surface would be covered with gravel, and sloped sections revegetated, until the other approved development projects are built.

The construction methods for all three alternatives include construction of the proposed conveyance pipeline and rough grading/earthwork improvements for the extension of Lone Star Road. Alternative 1 would result in approximately 40 acres of temporary disturbance area and approximately 10 acres of permanent disturbance area, for a total of approximately 50 acres of disturbance. While Alternative 2 and Alternative 3 have slight physical alignment variations, these alignment alternatives result in approximately 40 acres of temporary disturbance area and 10 acres of permanent disturbance area, for a total of approximately 50 acres of disturbance for the construction of the proposed conveyance pipeline.

2.6.2 Additional Project Infrastructure

In addition to the workers that would undertake construction of the proposed conveyance pipeline, up to an additional 12 workers would be needed to build the proposed metering station, the disinfection facility, the outfall structure, and the potential pump station (if required). A maximum of 24 workers would be working on project facilities at one time. Construction methods for the metering station, disinfection facility, outfall structure, and pump station would be similar for all proposed conveyance alignment alternatives. Construction activities, including construction staging areas, grading, and ingress/egress into O'Neal Canyon for the outfall structure, would result in approximately three acres of temporary disturbance area for the additional project infrastructure. The permanent physical structures, associated parking, and landscaping would result in approximately one acre of permanent disturbance area.

2.7 Operations and Maintenance

The operations and maintenance activities for the proposed conveyance pipeline would be minimal, but routine, to check for concerns related to function, safety, and normal upkeep. The proposed conveyance pipeline appurtenances, like vents, blow-off assemblies, and valves, would be physically examined and exercised either on a monthly, quarterly, semi-annual, or annual basis, as appropriate. Also, routine operations and maintenance activities would not require use of any construction equipment and would be performed by a single operations and maintenance staff person traveling by means of a pick-up truck or similar vehicle. The meter station, potential pump station, and potential disinfection facility would each require one daily maintenance trip. Daily maintenance for the outfall structure would not be

required, given its function and infrequent expected use. Chemical deliveries for the disinfection facility would occur approximately once per week during the winter and twice per week during the summer. District facilities that maintain a regulated chemical inventory of extremely hazardous materials (chlorine, ammonia), such as the disinfection facility, are required to comply with the California Accidental Release Prevention Program (CalARP). The facility has a Risk Management Program (RMP) that provides the details to safe use and storage of chemicals under the plan as well as emergency response procedures. In addition, any District facilities that store over 1320 gallons of petroleum products (new or used) would maintain a Spill Prevention Control and Countermeasure Plan (SPCC) that details the proper storage, use and emergency response procedures for the petroleum products. District facilities that have hazardous materials in quantities below the CalARP threshold, would have a Hazardous Materials Business Plan (HMBP) that details the safe use and storage of these materials and emergency spill response procedures. The HMBP, SPCC and CalARP programs are all regulated by the County of San Diego Hazardous Materials Division.

The potential pump station and disinfection facility would likely be powered with a combination of electric and natural gas. Energy calculations assume that operation of the meter station would be mechanical and would not result in additional energy demand. The outfall structure would not require any energy consumption. Landscape equipment would be used for landscape maintenance approximately once every two months. No fertilizers, herbicides, pesticides, or other chemicals would be used during operations and maintenance activities. Generator testing would occur monthly for 30 minutes at both the potential pump station and disinfection facility.

For purposes of maintaining the proposed conveyance pipeline between the United States-Mexico border and the terminus of the future Lone Star Road, access would be provided via the existing SDG&E easement and other existing dirt access roads to avoid the need to construct new roads. The District intends to negotiate an agreement with SDG&E to use their existing easement prior to the proposed project approval. For the portion of the proposed conveyance pipeline along future Lone Star Road, the future roadway surface would be rough graded by the construction contractor to future design elevations based on plans for the approved adjacent development projects prior to installation of the proposed conveyance pipeline and covered with gravel or revegetated following construction. Graded material, or spoil, will be piled along the trench and backfilled after installation. Future development projects would be responsible for paving the roadway. For the portion of the proposed conveyance pipeline north of Paseo de la Fuente's southerly cul-de-sac, access would occur via existing paved roadways.

2.8 No Action – No Project Alternative

The No Action – No Project Alternative would result from the Department not issuing a Presidential Permit for the proposed project to convey desalinated seawater from the United States-Mexico border to Roll Reservoir. No construction, including pipelines or related infrastructure, would occur under this alternative. The project area would remain in its current condition and continue to develop as planned and described in the San Diego County General Plan (County of San Diego 2011a) and East Otay Mesa Business Park Specific Plan (County of San Diego 2010). There are no reasonably foreseeable alternative means to secure additional water supplies. The District has studied the feasibility of groundwater use. The limited quantity of groundwater available and the level of treatment required make this approach infeasible. In the event the Presidential Permit is denied, the District will continue to import water supplies from the Colorado River and Northern California.

2.9 Comparison of Proposed Alternatives

Table 2-1 summarizes the conclusions reached herein regarding impacts discussed in Sections 3.1 through 3.10.

Table 2-1 Summary of Alternative Impacts							
Issue Areas	No Action Alternative	Alternative 1		Alternative 2		Alternative 3	
		Without Mitigation	With Mitigation	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
3.1 Air Quality							
Consistency with Regional Air Quality Plans	o	LS	LS	LS	LS	LS	LS
Consistency with Air Quality Standards	o	LS	LS	LS	LS	LS	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
Sensitive Receptors	o	LS	LS	LS	LS	LS	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
Objectionable Odors	o	LS	LS	LS	LS	LS	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
3.2 Biological Resources							
Species Identified as Candidate, Sensitive, or Special Status	o	S	LS	S	LS	S	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
Riparian Habitat or Other Sensitive Natural Community	o	S	LS	S	LS	S	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
Federally Protected Wetlands	o	S	LS	S	LS	S	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
Movement of Native Resident or Migratory Fish and Wildlife	o	LS	LS	LS	LS	LS	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
Conflicts with any Local Policies or Ordinances Protecting Biological Resources or an Adopted Habitat Conservation Plan	o	LS	LS	LS	LS	LS	LS
3.3 Cultural and Paleontological Resources							
Historical Resources	o	LS	LS	LS	LS	LS	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
Archaeological Resources	o	PS	LS	PS	LS	PS	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
Paleontological Resources	o	PS	LS	PS	LS	PS	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
Human Remains	o	PS	LS	PS	LS	PS	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
3.4 Environmental Justice							
Disproportionate Effects on a Community	o	LS	LS	LS	LS	LS	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC

o = No impact would occur as a result of the Alternative.

CC = Cumulatively Considerable

LCC = Project would contribute to a cumulative impact, but contribution would less than Cumulatively Considerable

LS = Less Than Significant Impact

NCC = Not Cumulatively Considerable (A cumulatively considerable impact would not occur)

PS = Potentially Significant

S = Significant Impact

SU = Significant and Unavoidable Impact

Table 2-1 Summary of Alternative Impacts

Issue Areas	No Action Alternative	Alternative 1		Alternative 2		Alternative 3	
		Without Mitigation	With Mitigation	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
3.5 Geology/Soils							
Geologic Hazards	o	LS	LS	LS	LS	LS	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
Erosion	o	LS	LS	LS	LS	LS	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
Unstable Soils	o	LS	LS	LS	LS	LS	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
Expansive Soils	o	LS	LS	LS	LS	LS	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
3.6 Greenhouse Gas Emissions							
Direct and Indirect Generation of GHG	o	SU ⁽¹⁾	SU ⁽¹⁾	SU ⁽¹⁾	SU ⁽¹⁾	SU ⁽¹⁾	SU ⁽¹⁾
Hazards Related to Climate Change	o	LS	LS	LS	LS	LS	LS
Conflict with Applicable Plan, Policy, or Regulation	o	PS	SU ⁽¹⁾	PS	SU ⁽¹⁾	PS	SU ⁽¹⁾
Energy Consumption	o	LS	LS	LS	LS	LS	LS
3.7 Hazards and Hazardous Materials							
Routine Transport, Use, or Disposal of Hazardous Materials and Accidental Release of Hazardous Materials	o	LS	LS	LS	LS	LS	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
Hazards to Schools	o	LS	LS	LS	LS	LS	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
Existing Hazardous Materials Sites	o	PS	LS	PS	LS	PS	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
Public and Private Airport Hazards	o	LS	LS	LS	LS	LS	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
Emergency Response and Evacuation Plans	o	LS	LS	LS	LS	LS	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
Wildland Fires	o	LS	LS	LS	LS	LS	LS
Cumulative	o	NCC	NCC	NCC	NCC	NCC	NCC
Project Security	o	LS	LS	LS	LS	LS	LS

⁽¹⁾ If the pump station is constructed.

o = No impact would occur as a result of the Alternative.

CC = Cumulatively Considerable

LCC = Project would contribute to a cumulative impact, but contribution would less than Cumulatively Considerable

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Table 2-1 Summary of Alternative Impacts

Issue Areas	No Action Alternative	Alternative 1		Alternative 2		Alternative 3	
		Without Mitigation	With Mitigation	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
3.8 Hydrology/Water Quality							
Water Quality Standards <i>Cumulative</i>	o o	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
Groundwater Supplies and Recharge <i>Cumulative</i>	o o	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
Drainage Alterations <i>Cumulative</i>	o o	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
100-Year Flood Hazards <i>Cumulative</i>	o o	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
Flooding and Inundation <i>Cumulative</i>	o o	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
3.9 Noise							
Noise Levels in Excess of Standards or Substantial Permanent Ambient Noise Increase <i>Cumulative</i>	o o	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
Excessive Groundborne Vibration or Groundborne Noise <i>Cumulative</i>	o o	LS CC	LS LCC	LS CC	LS LCC	LS CC	LS LCC
Substantial Temporary or Periodic Increase in Ambient Noise <i>Cumulative</i>	o o	LS LCC	LS LCC	LS LCC	LS LCC	LS LCC	LS LCC
Excessive Aircraft Noise <i>Cumulative</i>	o o	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
3.10 Transportation/Traffic							
Circulation System Performance <i>Cumulative</i>	o o	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
Conflict with an Applicable Congestion Management Program <i>Cumulative</i>	o o	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
Hazardous Design Features <i>Cumulative</i>	o o	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
Inadequate Emergency Access <i>Cumulative</i>	o o	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC
Alternative Transportation Facilities <i>Cumulative</i>	o o	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC	LS NCC

o = No impact would occur as a result of the Alternative.

CC = Cumulatively Considerable

LCC = Project would contribute to a cumulative impact, but contribution would less than Cumulatively Considerable

LS = Less Than Significant Impact

NCC = Not Cumulatively Considerable (A cumulatively considerable impact would not occur)

PS = Potentially Significant

S = Significant Impact

SU = Significant and Unavoidable Impact

2.10 Alternatives Considered During Screening

The following includes a brief description of the proposed conveyance pipeline alignment alternatives, connector segments (segments) and additional project infrastructure locations that were initially screened for consideration. While a few of the segments were incorporated into Alternatives 1, 2, and/or 3, most of the segments were rejected from further consideration.

Two conveyance pipeline connection points were originally considered at the United States-Mexico border; however, only one was carried forward with Alternatives 1, 2, and/or 3. The western United States-Mexico border connection point was eliminated from consideration because the Mexican agencies determined that the Mexican conveyance pipeline would be located east of the future Otay Mesa East POE and future Mexico East POE.

The majority of segments discussed below were eliminated from further consideration for the following reasons:

- Failure to satisfy the project objectives;
- Identification of environmental, engineering, or operational constraints;
- Potential effects to endangered or threatened species and/or sensitive habitat;
- Incompatibility with future land uses or approved tentative maps; and
- Conflicts with approved state highway projects or federal projects, including the future State Route 11 (SR-11) and Otay Mesa East POE.

The segments considered during the screening process are discussed below from south to north. Figure 2-2 delineates each of the segments described below.

A Segment

The A Segment was originally developed to serve one of two possible border crossing locations for the proposed conveyance pipeline. The A Segment began at the termination of Alta Road at the United States-Mexico border approximately 17,800 LF west of the future Otay Mesa East POE. This segment extended north along the existing, unpaved portion of Alta Road to the paved portion of Alta Road (beginning at Otay Mesa Road) and terminated at the intersection of Alta Road and Paseo de la Fuente. This segment was located under the future SR-11 roadway alignment, making access and maintenance of the proposed conveyance pipeline difficult. To avoid the structural components of the future SR-11, the proposed conveyance pipeline installation was also very deep (approximately 40 feet), resulting in much larger trenching zones. However, it avoided many biological effects because of its location in a disturbed existing roadway. The A Segment had the potential to connect to the B Segment, F Segment, E Segment, J Segment, or I Segment. A common footprint for the potential disinfection facility, potential pump station, and metering station facility would have been located along this segment in two potential locations (east and west of the proposed conveyance pipeline, just north of the connection point at the border). This segment was eliminated because the conveyance pipeline delivery point from Mexico was chosen to be located east of the future Otay Mesa East POE and future Mexico East POE, thus rendering A Segment infeasible.

B Segment

The B Segment provided an additional proposed conveyance pipeline route that served as a bridge between the connection point east of the future Otay Mesa East POE and the connection point at the southern terminus of Alta Road. The B Segment started at the connection point east of the future Otay

Mesa East POE and immediately turned due west, just north of the existing fence parallel to the United States-Mexico border until its connection to the A Segment. This segment was included as a way to use either the A Segment or the D Segment (discussed below), regardless of the eventual border crossing location selected by Mexico. However, this segment was eliminated from further consideration because it extended under the future Otay Mesa East POE, which was not permitted by the California Department of Transportation (Caltrans) or the U.S. Department of Transportation (USDOT). It was also eliminated given the close, parallel proximity to the United States-Mexico border and security concerns.

C Segment

The C Segment was originally developed to follow a planned relocated high-pressure gas pipeline, adjacent to the eastern perimeter of the future Otay Mesa East POE. The segment extended from the B Segment to a connection with the E Segment that ran along the northern edge of the future Otay Mesa East POE. The C Segment was considered incompatible with the relocated high-pressure gas pipeline. The general nature of and proximity to a high-pressure gas pipeline were considered a potential safety hazard and posed limitations for the District and the utility owner for operations and maintenance. This segment was ultimately eliminated because of its singular dependence upon the B Segment, which was also eliminated from further consideration as described above, thus rendering the C Segment infeasible.

D Segment

The D Segment began at the United States-Mexico border east of the future Otay Mesa East POE and followed the existing SDG&E power transmission lines and easement northwest to Roll Reservoir where it connected with either the I Segment or the N Segment. A common footprint for the potential disinfection facility, potential pump station, and metering station facility was located along this segment in two potential locations (east and west of the connection point at the border). This segment was eliminated from further consideration because it required greater overall proposed conveyance pipeline length, passed through a private property north of Kuebler Ranch Road, and was located completely outside of existing and planned roadways. In addition, this segment traversed biologically sensitive habitat areas and steep slopes, including O'Neal Canyon, increasing environmental effects. The lack of existing and planned roadways and difficult terrain in the vicinity of this segment would make maintenance of the proposed conveyance pipeline difficult for District staff.

E Segment

The E Segment connects the D Segment to the I or J Segments. The E Segment begins at the D Segment northeast of the future Otay Mesa East POE, and continues due west until it reaches the future Lone Star Road right-of-way. All but the eastern approximately 1,300 feet of E Segment was incorporated into the proposed alignment.

F Segment

The F Segment was a connector segment between the A and E Segments. The F Segment followed a planned, east-west utility corridor across the proposed SR-11 roadway alignment between the future alignment of Lone Star Road and the existing unpaved portion of Alta Road. The Otay Crossings Commerce Park development project has preliminary approval from Caltrans for the planned, east-west utility crossing of proposed SR-11. This segment was eliminated from further consideration because it resulted in additional proposed conveyance pipeline length, and additional construction costs due to its crossing of the future SR-11 roadway and interchange. Also, if the proposed project construction were to proceed before adjacent planned development(s), the acquisition of easements would have been

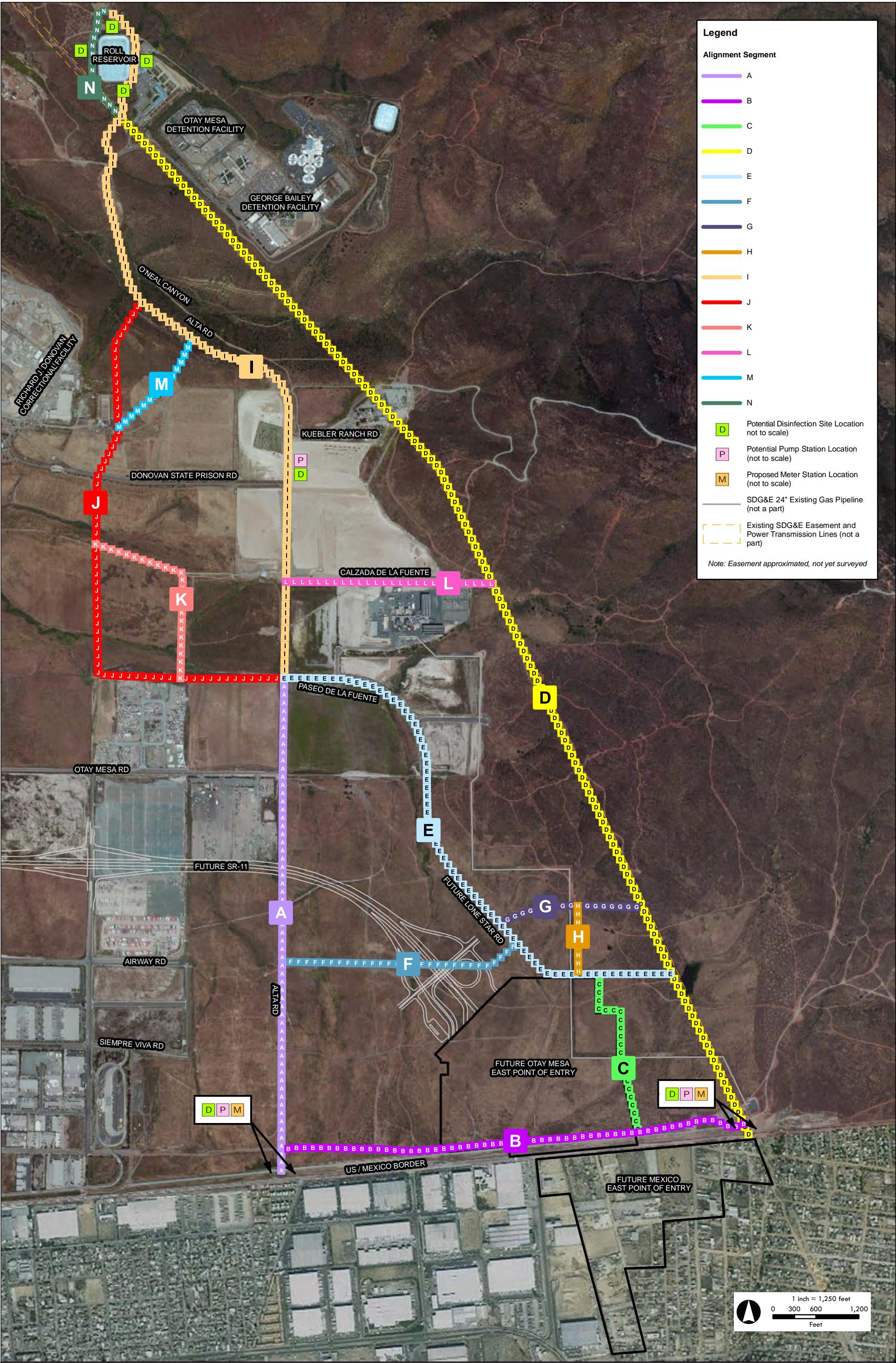


FIGURE 2-2
Screening Alignments Considered
100032058

Source: Atkins, 2014; San Diego County GIS, 2012; ESRI, 2014
Otay Mesa Conveyance and Disinfection System Project

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difficult for the District to obtain. In addition, the extension of this segment under the future SR-11 roadway and interchange made access and maintenance of the proposed conveyance pipeline difficult. Similar to the A Segment, trenching operations would be significantly deeper in order to avoid structural components of the future SR-11 roadway and interchange.

G Segment

The G Segment connected the D Segment to the E Segment. This segment was originally included simply for purposes of facilitating flexibility, but was removed from further evaluation due to increased effects to biologically sensitive areas. In addition, this segment was eliminated because it did not retain its value as a connector segment due to its dependence upon other alignment alternatives and connector segments.

H Segment

The H Segment was included as a flexibility consideration to provide a connection between the E Segment and the G Segment. It followed the existing SDG&E 24-inch gas pipeline alignment located north of the future Otay Mesa East POE. This connector segment was removed from further evaluation because it would cause unnecessary effects to biologically sensitive areas. In addition, the general nature of and proximity to a high-pressure gas pipeline was considered a potential safety hazard and posed limitations for the District and the utility owner for operations and maintenance.

I Segment

The I Segment was originally developed due to its location in an existing paved roadway (Alta Road) that terminates near Roll Reservoir. This segment became incorporated into Alternatives 1, 2, and 3 as a portion of the common segment.

J Segment

The J Segment was an alignment alternative to a portion of the I Segment. This segment extended west from the Alta Road/Paseo De La Fuente intersection along portions of paved and unpaved roads, then turned north toward Donovan State Prison Road traversing through mostly undeveloped area and a natural drainage corridor. The segment continued north onto the Richard J. Donovan Correctional Facility property eventually connecting to Alta Road near O'Neal Canyon. This segment was originally developed to avoid a high elevation in Alta Road in order to eliminate or reduce the potential need for a pump station. This segment was removed from further evaluation because it crossed through the future expansion footprint of the Richard J. Donovan Correctional Facility, making construction and maintenance of the proposed conveyance pipeline difficult. It also traversed biologically sensitive habitat, including a natural drainage corridor, resulting in unnecessary effects to biological resources.

K Segment

The K Segment provided an alignment alternative to a portion of the J Segment. The K Segment connected to the J Segment on both sides, in an effort to allow greater clearance from the existing Richard J. Donovan Correctional Facility. However, the K Segment was removed from further evaluation when the J Segment was eliminated as a feasible alternative.

L Segment

The L Segment extended along the existing paved portion of Calzada de la Fuente between the D Segment and the I Segment. This segment was originally included to provide an alignment alternative

that avoided the potential biological effects associated with the northern portion of the D Segment, including O'Neal Canyon, but was removed from further evaluation when the D Segment was eliminated as a feasible alternative.

M Segment

The M Segment connected the J Segment just north of Donovan State Prison Road to the I Segment in Alta Road. The segment provided an alignment alternative to a portion of the J Segment to reduce potential effects to biological resources. This segment was eliminated from further consideration because it crossed through the proposed future expansion footprint of the Richard J. Donovan Correctional Facility, making construction and maintenance of the proposed conveyance pipeline difficult. It traversed a biologically sensitive habitat area, resulting in unnecessary effects to biological resources.

N Segment

The N Segment provided an alignment alternative pipeline route to either the I Segment or the D Segment near the District's Roll Reservoir. The N Segment was located along the western perimeter of Roll Reservoir. A potential disinfection facility may be located at one of three potential locations near the N Segment, at the northern, western, and southern perimeters of Roll Reservoir. The N segment was eliminated from further consideration because it traversed a biologically sensitive habitat area, resulting in unnecessary effects to biological resources, specifically the federally endangered Quino checkerspot butterfly.

Chapter 3 **ALTERNATIVES ANALYSIS**

This chapter analyzes the affected environment in the proposed project's region of influence and the potential effects of Alternatives 1, 2, and 3 and associated facilities on the environment. When adverse environmental effects are identified, mitigation measures are detailed that are intended to reduce these effects.

The District adopted its WRMP in February 2010 (last revised in April 2013). The WRMP is intended to be a system-wide plan outlining the water system required to serve District customers at a point in the future when all projected land development has occurred in the District's service area. The WRMP identifies the CIPs needed to provide an adequate, reliable, flexible, and cost-effective potable and recycled water system. The District prepared a Program EIR (SCH #2008101127) for the WRMP project in accordance with CEQA that addressed the potential effects of the environment from construction and operation of the identified CIPs (OWD 2010b). As identified in the Program EIR, implementation of the WRMP includes PDFs and SCPs to reduce potential environmental effects on air quality and energy usage from District projects. These PDFs and SCPs are identified by environmental topic in the Program EIR prepared for the WRMP. It is important to note that, while not required as mitigation measures determined necessary by environmental impact analysis, the PDFs and SCPs are commitments incorporated into all District projects to reduce environmental effects.

3.1 Air Quality

This section analyzes the affected environment and the potential effects of Alternatives 1, 2, and 3 and associated facilities to conflict with or obstruct implementation of an applicable air quality plan, to violate an air quality standard, to result in a cumulatively considerable net increase of any criteria pollutant for which the project region is not in attainment, or to expose sensitive receptors to substantial pollutant concentrations. The information presented in this section is based on the Air Quality and Climate Change Evaluation (Atkins 2015a).

3.1.1 Environmental Setting/Affected Environment

3.1.1.1 Climate and Meteorology

Regional climate and local meteorological conditions influence ambient air quality. Alternatives 1, 2, and 3 are located within the San Diego Air Basin (SDAB). The climate of the SDAB is dominated by a semi-permanent high-pressure cell located over the Pacific Ocean. This cell influences the direction of prevailing winds (westerly to northwesterly) and maintains clear skies for much of the year. It also drives the dominant onshore circulation and helps create two types of temperature inversions, subsidence and radiation, that contribute to local air quality degradation.

3.1.1.2 Air Pollutants

Historically, air quality laws and regulations have divided air pollutants into two broad categories: criteria air pollutants and toxic air contaminants (TACs). Criteria air pollutants are a group of common air pollutants regulated by the federal and state governments by means of ambient standards based on criteria regarding health and/or environmental effects of pollution (EPA 2013a). TACs are often referred to as “non-criteria” air pollutants because ambient air quality standards have not been established for them. Under certain conditions, TACs may cause adverse health effects, including cancer and/or acute and chronic noncancerous effects. The following sections provide a description of relevant criteria air pollutants and TACs.

Criteria Air Pollutants

The criteria air pollutants pertinent to the construction and operation of Alternatives 1, 2, and 3 are carbon monoxide (CO), nitrogen oxides (NO_x), ozone (O₃), particulate matter (PM₁₀ and PM_{2.5}), and sulfur dioxide (SO₂). Other criteria air pollutants for which national or state ambient standards have been established include lead, visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. The construction and operation of Alternatives 1, 2, and 3 would not generate emissions of lead, visibility reducing particles, sulfates, hydrogen sulfide, or vinyl chloride. Therefore, these pollutants are not addressed in this Draft EIR/EIS.

The following describes the health effects for each of the identified criteria air pollutants based on information published by the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) (EPA 2012, CARB 2014d).

Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless, poisonous gas, produced by incomplete burning of carbon-based fuels, including gasoline, oil, and wood. When CO gets into the body, it combines with chemicals in the blood and prevents the blood from providing oxygen to cells, tissues, and organs. Because the body requires oxygen for energy, high-level exposures to CO can cause serious health effects.

Nitrogen oxides

Nitrogen oxides (NO_x) is a general term pertaining to compounds, including nitric oxide, nitrogen dioxide, and other oxides of nitrogen. NO_x are produced from burning fuels, including gasoline, diesel, and coal. NO_x are smog formers, which react with volatile organic compounds (VOCs) to form smog.

Ozone

Ozone (O₃) is a corrosive gas that exists in two layers of the atmosphere. It occurs naturally in the stratosphere (upper atmosphere) where it absorbs and provides a protective shield against the sun’s damaging ultraviolet radiation. It also exists in the troposphere (lower atmosphere), and even near ground level, where it can cause health effects in humans including respiratory and eye irritation and decreases in lung function and capacity. O₃ is not emitted directly. It forms in the atmosphere by chemical reactions of directly emitted “precursor” pollutants (NO_x and VOCs) in the presence of sunlight.

Particulate Matter

Particulate matter (PM₁₀ and PM_{2.5}) includes dust, soot, and other tiny bits of solid materials that are released into and move around in the air. Particulates are produced by many sources, including road dust, diesel exhaust, fuel combustion, construction operations, and windblown dust. Particulate pollution can cause eye, nose, and throat irritation as well as other health problems.

Sulfur Dioxide

Sulfur dioxide (SO₂) is a pungent, colorless gas formed primarily by the combustion of sulfur-containing fossil fuels, especially coal and oil. The highest concentrations of SO₂ are found near large industrial sources. SO₂ is a respiratory irritant that can cause narrowing of the airways leading to wheezing and shortness of breath.

Other Regulated Air Pollutants

VOCs are defined as any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions. The major sources of VOCs in the SDAB are on-road motor vehicles and solvent evaporation. Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations because of interference with oxygen uptake. In general, higher concentrations of VOCs are suspected to cause eye, nose, and throat irritation; headaches; loss of coordination; nausea; and damage to the liver, kidneys, and central nervous system (EPA 1999). It should be noted that there are no California Ambient Air Quality Standards (CAAQS) or National Ambient Air Quality Standards (NAAQS) for VOCs because they are not classified as criteria pollutants. They are regulated, however, because a reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of O₃.

Toxic Air Contaminants

TACs are a category of air pollutants that have been shown to have an impact on human health but are not classified as criteria pollutants. Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a number of sources, including construction activities; area sources, such as architectural coatings for maintenance purposes, fuel combustion emissions from landscape maintenance equipment, and energy use from space and water heating; stationary sources such as diesel emergency generators and laboratories; and mobile sources. Adverse health effects of TACs can be carcinogenic (cancer-causing), short-term (acute) non-carcinogenic, and long-term (chronic) non-carcinogenic.

Diesel particulate matter (DPM) can be a TAC of concern during construction of a project due to use of heavy trucks. DPM is a mixture of many exhaust particles and gases that is produced when an engine burns diesel fuel and many compounds found in diesel exhaust are carcinogenic. Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation and exposure can cause coughs, headaches, light-headedness, and nausea. Diesel exhaust is a major source of ambient fugitive dust pollution as well, and numerous studies have linked elevated fugitive dust levels in the air to increased hospital admission, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems (OEHHA 2001).

3.1.1.3 Ambient Air Pollutant Levels

The San Diego Air Pollution Control District (SDAPCD) operates a network of 10 ambient air monitoring stations throughout San Diego County that measure ambient concentrations of air pollutants and

determine whether the ambient air quality meets the NAAQS and the CAAQS. The nearest ambient monitoring station to the project area is the Otay Mesa-Paseo International station, located to the west of the project area. The nearest station that measures CO is the El Cajon-Redwood Avenue station, located north of the project area. Table 3.1-1 presents a summary of the ambient pollutant concentrations monitored at the nearest monitoring stations during the last three years available (2012–2014).

As shown in Table 3.1-1, the 1-hour and 8-hour O₃ concentrations did not exceed the state or federal standards in 2012 through 2014. The federal 24-hour PM₁₀ concentration did not exceed the federal standard in the past three years; however, the state PM₁₀ standard was violated six times in 2012.

Levels of CO, NO₂, SO₂, and PM_{2.5} did not exceed state or federal standards for at any time during the years 2012 through 2014. NO₂ levels have not exceeded the federal annual average standard since 1978, and have not exceeded the California 1-hour standard since 1988 (SDAPCD 2007a). With one exception during October 2003, the SDAB has not violated the state or federal standards for CO since 1990 (SDAPCD 2007a).

Table 3.1-1 Air Quality Monitoring Data

Pollutant	Monitoring Station	2012	2013	2014
Carbon Monoxide (CO)				
Maximum 8-hour concentration (ppm)	El Cajon-Redwood Avenue	1.86	--	--
Days above state or federal standard (>9.0 ppm)		0	0	0
Nitrogen Dioxide (NO ₂)				
Peak 1-hour concentration (ppm)	Otay Mesa-Paseo International	0.077	0.091	0.087
Days above state 1-hour standard (0.18 ppm)		0	0	0
Ozone (O ₃)				
Maximum 1-hour concentration (ppm)	Otay Mesa-Paseo International	0.081	0.073	0.061
Days above 1-hour state standard (>0.09 ppm)		0	0	0
Maximum 8-hour concentration (ppm)		0.061	0.063	0.054
Days above 8-hour state standard (>0.07 ppm)		0	0	0
Days above 8-hour federal standard (>0.075 ppm)		0	0	0
Sulfur Dioxide (SO ₂)				
Maximum 24-hour concentration (ppm)	El Cajon-Redwood Avenue	0.001	0.001	--
Days above 24-hour state standard (>0.04 ppm)		0	0	0
Days above 24-hour federal standard (>0.14 ppm)		0	0	0
Respirable Particulate Matter (PM ₁₀)				
Peak 24-hour concentration (µg/m ³)	Otay Mesa-Paseo International	126	--	--
Days above state standard (>50 µg/m ³)		6	0	0
Days above federal standard (>150 µg/m ³)		0	0	0
Fine Particulate Matter (PM _{2.5})				
Peak 24-hour concentration (µg/m ³)	Chula Vista	34.3	21.9	26.5
Days above federal standard (>35 µg/m ³)		0	0	0

ppm = parts per million, µg/m³ = micrograms per cubic meter
Source: CARB 2014b

3.1.1.4 Sensitive Receptors and Locations

The County of San Diego defines sensitive receptors for air quality effects as residences, schools, hospitals, resident care facilities, day-care centers, or other facilities that may house individuals with health conditions that would be adversely affected by changes in air quality. The existing sensitive receptors closest to the project area include the following:

- 1) San Diego Correctional Facility and Otay Mesa Detention Facility, approximately 0.2 mile (1,100 feet) southeast of Roll Reservoir;
- 2) Richard J. Donovan Correctional Facility, approximately 0.2 mile (1,100 feet) west of Alta Road;
- 3) George F. Bailey Detention Facility, approximately 0.3 mile (1,600 feet) east of Alta Road; and
- 4) Residences on Otay Mesa Road, approximately 0.75 mile (4,100 feet) west of Alta Road.

New facilities are proposed at the Richard J. Donovan Correctional Facility, including new bed towers. The proposed improvement area is located approximately 900 feet east of the intersection of Donovan State Prison Road and Alta Road. Once constructed, the new bed towers would be considered a sensitive receptor.

3.1.2 Regulatory Setting

3.1.2.1 Federal Regulations and Standards

Clean Air Act

The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the EPA to establish NAAQS with states retaining the option to adopt more stringent standards or to include other specific pollutants. These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those “sensitive receptors” most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise.

The EPA has classified air basins (or portions thereof) as being in “attainment,” “non-attainment,” or “unclassified” for each criteria air pollutant, based on whether the NAAQS have been achieved. If an area is designated unclassified, it is because there is insufficient data to designate an area, or designations have yet to be made. Table 3.1-2 lists the federal attainment status of the SDAB for the criteria pollutants.

Table 3.1-2 San Diego Air Basin Attainment Status		
Pollutant	State Status	Federal Status
Carbon Monoxide (CO)	Attainment	Maintenance (Moderate)
Nitrogen Dioxide (NO ₂)	Attainment	Attainment/Unclassified
Ozone (O ₃) (1-hour)	Non-attainment	No Federal standard
Ozone (O ₃) (8-hour)	Non-attainment	Non-attainment (Marginal)
Lead (Pb)	Attainment	Attainment/Unclassified
Sulfur Dioxide (SO ₂)	Attainment	Attainment/Unclassified
Respirable Particulate Matter (PM ₁₀)	Non-attainment	Attainment/Unclassified
Fine Particulate Matter (PM _{2.5})	Non-attainment	Attainment/Unclassified
Source: EPA 2013a, CARB 2013b		

Federal General Conformity Rule

Federal projects are subject to either the Transportation Conformity Rule (40 CFR, Part 51, Subpart T), which applies to federal highway and transit projects, or the General Conformity Rule (40 CFR, Part 51, Subpart W), which applies to all other federal projects. The General Conformity Rule implements Section 176(c) of the federal CAA, which requires that a federal agency ensure conformity with an approved State Implementation Plan (SIP) for air emissions generated by an agency action. Conformity determinations for federal actions are required for each pollutant where the total of direct and indirect emissions in a non-attainment or maintenance area caused by a federal action equaling or exceeding any of the rates identified in Table 3.1-3. Because the project area is located within the SDAB, which is in non-attainment for O₃ and a maintenance area for carbon monoxide, conformity determination requirements do apply. If a project's emissions would exceed the de minimis thresholds for CO, NO_x, or VOCs, the project would be considered to have a significant impact related to O₃.

Table 3.1-3 Federal De Minimis Levels	
Pollutant	Threshold
Volatile Organic Compounds (VOCs)	100 tons/year
Nitrogen Oxides (NO _x)	100 tons/year
Carbon Monoxide (CO)	100 tons/year
Source: 40 CFR Part 93.153(b)(2)	

3.1.2.2 State Regulations and Standards

California Clean Air Act

The CAA allows states to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the CAAQS. The NAAQS and CAAQS are listed below in Table 3.1-4.

California State Implementation Plan

The CAA (and its subsequent amendments) required each state to prepare an air quality control plan referred to as the SIP. The SIP is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The EPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA, and achieve air quality goals when implemented. CARB adopts the California SIP. SDAPCD has developed the SDAB input to the SIP, which is required under the federal CAA for areas that are out of attainment of air quality standards. The SIP includes APCD plans and control measures for attaining the O₃ NAAQS (CARB 2004).

Toxic Air Contaminant Regulations

California regulates TACs primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807—Tanner Act) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588—Hot Spots Act). The Tanner Act sets forth a formal procedure for CARB to designate substances as TACs. The Hot Spots Act requires that existing facilities that emit toxic substances above specified levels complete the following: (1) prepare a toxic emission inventory, (2) prepare a risk assessment if emissions are significant (i.e., 10 tons per year or on the Air District's Hot Spots Risk Assessment list), (3) notify the public of significant risk levels, and (4) prepare and implement risk reduction measures.

Table 3.1-4 National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards ⁽¹⁾	Federal Standards ⁽²⁾	
		Concentration ⁽³⁾	Primary ^(3, 4)	Secondary ^(3, 5)
Ozone (O ₃)	1 Hour	0.09 ppm (180 µg/m ³)	--	Same as Primary Standards
	8 Hour	0.070 ppm (137 µg/m ³)	0.075 ppm (147 µg/m ³)	
Respirable Particulate Matter (PM ₁₀)	24 Hour	50 µg/m ³	150 µg/m ³	Same as Primary Standards
	Annual Arithmetic Mean	20 µg/m	--	
Fine Particulate Matter (PM _{2.5})	24 Hour	--	35 µg/m ³	Same as Primary Standards
	Annual Arithmetic Mean	12 µg/m ³	12 µg/m ³	15 µg/m ³
Carbon Monoxide (CO)	8 Hour	9 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)	None
	1 Hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)	53 ppm (100 µg/m ³) ⁶	Same as Primary Standard
	1 Hour	0.18 ppm (470 mg/m ³)	100 ppb (188 µg/m ³) ⁶	None
Sulfur Dioxide (SO ₂)	24 Hour	0.04 ppm (105 µg/m ³)	--	--
	3 Hour	--	--	0.5 ppm (1300 µg/m ³) ⁷
	1 Hour	0.25 ppm (655 µg/m ³)	75 ppb (196 µg/m ³) ⁷	--
Lead ⁽⁸⁾	30 Day Average	1.5 µg/m ³	--	--
	Calendar Quarter	--	1.5 µg/m ³	Same as Primary Standard
	Rolling 3-month Average ⁽⁹⁾	--	0.15 µg/m ³	
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer - visibility of 10 miles or more due to particles.	No Federal Standards	
Sulfates	24 Hour	25 µg/m ³	No Federal Standards	
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m ³)	No Federal Standards	
Vinyl Chloride ⁽⁸⁾	24 Hour	0.01 ppm (26 µg/m ³)	No Federal Standards	

⁽¹⁾ California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM₁₀, PM_{2.5}, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

⁽²⁾ National standards (other than hour ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM_{2.5}, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

⁽³⁾ Concentration expressed first in units in which it was promulgated. Equivalent units given in parenthesis are based on a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

⁽⁴⁾ National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

⁽⁵⁾ National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

⁽⁶⁾ To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (ppb). Note that the national 1-hour standard is in units of ppb. California standards are in units of ppm. To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

⁽⁷⁾ On June 2, 2010, a new 1-hour SO₂ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO₂ national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. Note that the 1-hour national standard is in units of ppb. California standards are in units of ppm. To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

⁽⁸⁾ ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

⁽⁹⁾ The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m³ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

Source: CARB 2013c

In September 2000, CARB approved the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles (CARB 2000). The plan outlines a comprehensive and ambitious program that includes the development of numerous control measures aimed at substantially reducing emissions from new and existing on-road vehicles (e.g., heavy-duty trucks and buses); off-road equipment (e.g., graders, tractors, forklifts, sweepers, and boats); portable equipment (e.g., pumps); and stationary engines (e.g., stand-by power generators).

3.1.2.3 Regional/Local Regulations and Standards

San Diego County Regional Air Quality Strategy

SDAPCD is the local agency responsible for the administration and enforcement of air quality regulations for San Diego County. SDAPCD regulates most air pollutant sources, except for motor vehicles, marine vessels, aircrafts, and agricultural equipment, which are regulated by CARB or the EPA. State and local government projects, as well as projects proposed by the private sector, are subject to SDAPCD requirements if the sources are regulated by SDAPCD. Additionally, SDAPCD, along with CARB, maintains and operates ambient air quality monitoring stations at numerous locations throughout San Diego County.

SDAPCD and SANDAG are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. The San Diego County Regional Air Quality Strategy (RAQS) was initially adopted in 1991 and is updated on a triennial basis. The RAQS outlines SDAPCD's plans and control measures designed to attain the state air quality standards for O₃. SDAPCD has also developed the SDAB's input to the SIP, which is required under the federal CAA for pollutants designated as being in non-attainment of national air quality standards for the basin (SDAPCD 2007b).

The RAQS relies on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in the county, to project future emissions and then establish the strategies necessary for the reduction of emissions through regulatory controls. CARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the cities and by the County of San Diego as part of the development of their general plans.

The SIP relies on the same information from SANDAG to develop emission inventories and emission reduction strategies that are included in the attainment demonstration for the air basin. The SIP also includes rules and regulations that have been adopted by SDAPCD to control emissions from stationary sources. These SIP-approved rules may be used as a guideline to determine whether a project's emissions have the potential to conflict with the SIP and thereby hinder attainment of the NAAQS for O₃.

San Diego Air Pollution Control District Rule 50 and 55, Fugitive Dust Control

In addition to the RAQS and SIP, SDAPCD adopted the "Measures to Reduce Particulate Matter in San Diego County" report in December 2005 (SDAPCD 2005). As a result of the evaluation, SDAPCD proposed measures for further evaluation to reduce particulate emissions from residential wood combustion and from fugitive dust from construction sites and unpaved roads. SDAPCD requires that construction activities implement the measures listed in Rule 50 and Rule 55 to minimize visible and fugitive dust emissions (SDAPCD 2009b).

Other San Diego Air Pollution Control District Rules and Regulations

Rule 51 prohibits nuisances, including objectionable odors (SDAPCD 1969). Rule 67 establishes VOCs content limits for architectural coatings (SDAPCD 2001). Rule 1200 applies to any new, relocated, or modified emission unit that may increase emissions of one or more toxic air contaminant (SDAPCD 1996). Additionally, APCD Rule 1210 implements the public notification and risk reduction requirements of the State Air Toxics “Hot Spots” Act, and requires facilities to reduce risks to acceptable levels within five years.

3.1.3 Thresholds of Significance

3.1.3.1 CEQA Significance Criteria

Thresholds used to evaluate potential air quality effects are based on applicable criteria in the State CEQA Guidelines Appendix G. A significant air quality impact occurs if the proposed project would:

- 1) Conflict with or obstruct implementation of the San Diego RAQS or applicable portions of the SIP;
- 2) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- 3) Expose sensitive receptors (including, but not limited to, schools, hospitals, resident care facilities, or day-care centers) to substantial pollutant concentrations; or
- 4) Create objectionable odors affecting a substantial number of people.

SDAPCD does not provide quantitative thresholds for determining the significance of construction or mobile source-related projects. However, SDAPCD does specify Air Quality Impact Analysis (AQIA) trigger levels for new or modified stationary sources (SDAPCD Rules 20.2 and 20.3). If emissions exceed these incremental levels, an AQIA must be performed. Although these trigger levels do not generally apply to mobile sources or general land development projects, for comparative purposes these levels may be used to evaluate the increased emissions from these projects. For CEQA purposes, the screening level thresholds can be used to demonstrate that a project’s total emissions would not result in a significant impact to air quality. Because the AQIA screening thresholds do not include VOCs, the screening level for VOCs used in this analysis are from the South Coast Air Quality Management District (SCAQMD), which generally has stricter emissions thresholds than SDAPCD. For PM_{2.5}, the EPA “Proposed Rule to Implement the Fine Particle National Ambient Air Quality Standards” published in 2005, which quantifies significant emissions as 10 tons per year, is used as the screening level threshold. These thresholds have been adopted by the County of San Diego for CEQA analysis (County of San Diego 2007a). The thresholds listed in Table 3.1-5 are used in this analysis to determine whether implementation of Alternatives 1, 2, and 3 has the potential to violate an air quality standard or contribute substantially to an existing or projected air quality violation.

Table 3.1-5 San Diego Air Pollution Control District Pollutant Thresholds

Pollutant	Pounds Per Day
Carbon monoxide (CO)	550
Nitrogen Oxides (NO _x)	250
Respirable Particulate Matter (PM ₁₀)	100
Fine Particulate Matter (PM _{2.5})	55 ⁽¹⁾
Oxides of Sulfur (SO _x)	250
Lead (Pb)	3.2
Volatile Organic Compounds (VOC)	75 ⁽²⁾

⁽¹⁾ EPA "Proposed Rule to Implement the Fine Particle National Ambient Air Quality Standards" published September 2005.

⁽²⁾ Based on VOC threshold from South Coast Air Quality Management District (SCAQMD 2006).

Source: SDAPCD Rule 20.2 (d)(2), Table 20.2-1.

3.1.3.2 NEPA Considerations

As part of its NEPA review, the Department considers whether the project would be in conformance with the CAA. A General Conformity Determination under the CAA is part of a NEPA review. As such, a quantitative evaluation of construction and operational emissions was conducted and evaluated against the federal de minimis thresholds listed above in Table 3.1-3 to determine whether implementation of Alternatives 1, 2, and 3 would result in an adverse effect.

3.1.4 Applicable Regulatory Measures

The following PDFs and SCPs are applicable to the proposed project:

- Ene-PDF-1 CIP projects featuring electric pumps and motors will use high efficiency pumps and motors.
- Ene-PDF-2 All outdoor (security) lighting installed at the above-ground CIP facilities (i.e., storage reservoirs/tanks and pump stations) under the 2009 WRMP Update will use energy-efficient light emitting diodes, with motion sensor lighting controls to limit usage. Lighting adjacent to native vegetation communities will be of low illuminations, shielded, and directed downwards and away from these areas to avoid potential effects to nocturnal wildlife from increased predation that would occur from "spill-over" of nighttime light levels into the adjacent habitats.
- Ene-PDF-3 The District will conduct annual pump efficiency tests at each CIP project featuring a pump and correct any decreases in efficiency through the repair or replacement of appropriate pump components.
- Ene-PDF-4 The District will employ soft starts and stops to all CIP project pumps and motors to reduce total electricity consumption during operation of pumps and motors.
- Air-SCP-1 Prior to construction of CIP projects, the following measures shall be taken to reduce fugitive dust emissions (PM_{2.5}, and PM₁₀). Measures shall be implemented during construction, including but not limited to, the following actions:

- During grading and site preparation activities, exposed soil areas shall be watered as necessary (at least twice per day) to prevent dust emissions. During windy days or when fugitive dust can be observed leaving construction sites, additional applications of water shall be required. Under windy conditions where wind velocities are forecast to exceed 25 miles per hour, all ground-disturbing activities shall be halted until the winds are forecast to be less than 25 miles per hour.
- Where visible soil material is carried onto adjacent public paved roads, the paved roads shall be swept or washed down at the end of the day to avoid vehicles from pulverizing the dirt into fine particles.
- Trucks transporting materials to and from the site shall allow for at least two feet of freeboard (i.e., minimum vertical distance between the top of the load and the top of the trailer). Alternatively, trucks transporting materials shall be covered.

Air-SCP-2 Prior to construction of CIP projects, the following measures shall be taken to reduce potential emissions of O₃ precursors (NO_x and VOCs) associated with construction equipment. Measures shall be implemented during construction, including but not limited to the following action:

- All construction equipment utilized for the construction of proposed CIP projects shall be maintained, tuned, and operated in accordance with all relevant SDAPCD, CARB, and EPA standards.

Air-SCP-3 During project construction activities, the CIP Project Construction Manager will supervise the following Best Management Practices (BMPs) to reduce emissions associated with diesel equipment:

- Properly operate and maintain all diesel-powered vehicles and equipment.
- Retrofit diesel-powered equipment with “after-treatment” products (e.g., diesel oxidation catalysts, diesel particulate filters).
- Use electric or natural gas-powered construction equipment in lieu of gasoline or diesel-powered engines.
- Turn off all diesel-powered vehicles and gasoline-powered equipment when not in use for more than five minutes.
- Support and encourage ridesharing and transit incentives for the construction crew.
- Encourage the use of locally available building materials, such as concrete, stucco, and interior finishes.
- Use light-colored or a high-albedo (reflectivity) concrete and asphalt paving materials with a Solar Reflectance Index of 29 or higher.
- Establish a construction management plan with the local waste hauler that diverts a minimum of 50% of construction, demolition, and site clearing waste.

3.1.5 Environmental Effects

3.1.5.1 Alternatives 1, 2, and 3

Issue 1: Consistency with Regional Air Quality Plans

Would implementation of Alternatives 1, 2, or 3, or associated facilities conflict with or obstruct implementation of the San Diego Regional Air Quality Strategy (RAQS) or applicable portions of the State Implementation Plan (SIP)?

The most current air quality planning document for SDAPCD and thus the applicable air quality plan to assess compliance with Alternatives 1, 2, and 3 is the 2009 RAQS (SDAPCD 2009a). The 2009 RAQS and SIP were developed based on growth projections, land use, and other planning information from SANDAG, which obtains information and growth projections from the general plans of local jurisdictions.

The District also uses data from SANDAG for water supply and infrastructure planning. As described in Section 3.1.4, the District completed a comprehensive WRMP update in 2008 that identified a list of CIPs necessary to provide adequate water supplies to customers within the District service area. The capital improvements identified in the WRMP, which included the proposed project, are designed to meet the water supply needs for the approved land use development plans and growth projections within the planning area, consistent with the same planning data provided by SANDAG for the 2009 RAQS and SIP. Additionally, the Program EIR prepared for the 2008 WRMP addressed the potential environmental effects associated with the implementation of the plan and concluded that implementation of the plan is not growth inducing (OWD 2010b).

Because implementation of Alternatives 1, 2, and 3 would be consistent with the 2008 WRMP, project implementation would not result in unplanned population growth that would exceed the population projections accounted for in the RAQS and SIP. Therefore, Alternatives 1, 2, and 3 would not conflict with or obstruct the implementation of an applicable air quality plan and the impact would be less than significant.

Issue 2: Consistency with Air Quality Standards

Would implementation of Alternatives 1, 2, or 3, or associated facilities violate any air quality standards or contribute substantially to an existing or projected air quality violation?

This section addresses the potential for Alternatives 1, 2, and 3 and associated facilities to generate criteria air pollutant emissions that exceed ambient air quality standards. Construction and operational criteria air pollutant emissions generated by implementation of Alternatives 1, 2, or 3 are discussed below. Although the total disturbance area varies slightly between the three alternatives, the total vehicle trips, construction schedule, construction equipment fleet, permanent structure footprint, import and export quantities, and project operation would be approximately the same for all alternatives. Therefore, construction and operational emissions would be approximately the same for all three alternative alignments. The emissions modeled below are the estimated emissions for any of the three alignments, and are based on a conservative disturbance area of 56.92 acres.

Construction

Construction of Alternatives 1, 2, and 3 would result in temporary increases in air pollutant emissions. Operation of heavy equipment and vehicles during the construction phases would generate exhaust emissions from fuel combustion. Fugitive dust emissions would be generated from earth disturbance

during site grading, as well as from construction vehicles operating in open fields or dirt roadways within or adjacent to the construction area.

Construction of Alternatives 1, 2, and 3 would take place over an approximately 10-month period and would include overlapping construction activities. Pipeline installation would occur concurrently with construction of permanent structures. The analysis assumes that the construction fleets for grading, trenching, paving, and construction would be used simultaneously, with approximately 50 percent of the fleet in operation at any given time (a total of 5 hours of operation per day per equipment). Disturbance to approximately 40 acres would occur during construction, with another 10 acres being permanently disturbed. During construction, approximately 26,000 cubic yards of material would be exported and a total of 8,000 cubic yards imported for trench backfill. A total of 34 one-way truck trips (e.g., 17 roundtrips) would be required per day. The analysis assumes that the maximum 24-person construction crew would each generate 6 one-way trips, for a total of 144 daily worker vehicle trips. No exterior coating would be required for the permanent above-ground structures. Only equipment in the interior of the pump station would require coating. The walls, floors, and ceilings of the disinfection facility would require coating, for a total interior coating area of approximately 100,000 SF. With the exception of the criteria discussed above, California Emissions Estimator Model (CalEEMod) default values were used to calculate the emissions for the worst-case construction scenario (CARB 2013a). The Air Quality and Climate Change Evaluation includes a complete list of anticipated construction requirements (Atkins 2015a).

Table 3.1-6 summarizes the maximum daily construction emissions compared to the CEQA thresholds of significance. As shown in Table 3.1-6, unmitigated construction emissions would not exceed the CEQA significance thresholds, adapted from the SDAPCD AQIA thresholds, for any criteria air pollutants during construction. Modeling anticipates that disturbed areas are watered twice daily in accordance with Air-SCP-1. Compliance with the remaining requirements of Air-SCP-1, Air-SCP-2, and Air-SCP-3 would likely result in lower emissions than reported in Table 3.1-6; however, emissions reduction quantification for these measures is not available at this time because project-specific information is unknown. However, even without the additional emissions reductions from these measures, implementation of Alternatives 1, 2, and 3 would result in less than significant daily emissions of criteria air pollutants during construction.

Table 3.1-6 Worst-Case Daily Emissions Associated with Construction

Emission Source	Unmitigated Maximum Daily Emissions, pounds per day					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Grading, Trenching, and Paving ⁽¹⁾	14	147	92	<1	12	8
Building Construction	3	29	19	<1	2	2
Architectural Coating	15	2	2	<1	<1	<1
Total	32	178	113	<1	14	10
Significance Threshold	75	250	550	250	100	55
Significant Impact?	No	No	No	No	No	No

Includes hauling of imported and exported material and all worker vehicle trips.

Source: CalEEMod Version 2013.2.2. See Air Quality and Climate Change Evaluation (Atkins 2015a) for model output.

The total annual CO and O₃ precursor emissions from project construction are included in Table 3.1-7 and compared to the federal de minimis thresholds. As shown in Table 3.1-7, construction emissions for each construction year are below the recommended federal de minimis thresholds and a full conformity analysis is not required.

Table 3.1-7 Estimated Total Construction Air Pollutant Emissions

Phase	Maximum Annual Emissions (tons/year)		
	VOC	NO _x	CO
Total Construction Emissions	2	16	10
Federal Threshold	100	100	100
Significant Impact?	No	No	No

Source: CalEEMod Version 2013.2.2. See Attachment A for model output.

Operation

Following construction, operation of Alternatives 1, 2, and 3 would not result in new sources of criteria pollutants. However, daily operational emissions would be associated with the proposed permanent above-ground facilities as a result of maintenance trips, natural gas use, and operation of landscape equipment. One daily maintenance trip each would be required for the meter station, pump station, and disinfection facility. Chemical deliveries for the disinfection facility would also occur approximately once per week during the winter and twice per week during the summer.

The potential new pump station would be powered by electricity or a combination of electric gas and natural gas. If a combination of power sources is selected, projected natural gas use at a pump station with half electricity- and half natural gas-powered pumping would be approximately 83 million Kilo British Thermal Units (kBtu) of natural gas. Refer to Section 5.1 of the Air Quality and Climate Change Evaluation (Atkins 2015a) for complete details on energy use estimates. If the pump station is not required, then natural gas usage would not occur and emissions reduce accordingly. The analysis assumes that operation of the meter station would be mechanical and would not result in additional energy demand. Landscape equipment would be used for maintenance approximately once every two months. Generator testing would occur monthly for 30 minutes at both the pump station and disinfection facility.

Maximum daily vehicular and area source emissions associated with operations of Alternatives 1, 2, and 3 are summarized in Table 3.1-8. Emissions would likely be lower than reported in Table 3.1-8 because modeling does not take into account compliance with Ene-PDF-1 through Ene-PDF-4, which require high-efficiency pumps and motors, energy-efficient lighting, pump efficiency tests, and soft starts and stops to all project pumps and motors. Emissions reduction quantification for these measures is not available at this time because project-specific information is unknown. However, even without the additional emissions reductions from these measures, operational emissions would not exceed the daily regional thresholds for any criteria pollutant. Therefore, operational emissions would be less than significant.

The total annual CO and O₃ precursor emissions from operational emissions of Alternatives 1, 2, and 3 are included in Table 3.1-9 and compared to the federal de minimis thresholds. As shown in Table 3.1-9, operational emissions would be below the recommended federal significance thresholds and a full conformity analysis is not required.

Table 3.1-8 Operation Maximum Daily Emissions

Emissions Source	Pollutant Emissions (pounds/ day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Vehicular Sources	1	7	18	<1	3	1
Generator Testing	--	7	1	<1	<1	--
Area Sources						
Natural Gas	2	23	19	<1	2	2
Landscape	<1	<1	<1	0	<1	<1
Architectural Coating	<1	0	0	0	0	0
Total Emissions	3	37	38	<1	5	3
Significance Thresholds	75	250	550	250	100	55
Significant Impact?	No	No	No	No	No	No

CO = carbon monoxide; NO_x = nitrogen oxides; VOC = volatile organic compounds; SO_x = sulfur oxides

PM₁₀ = respirable particulate matter; PM_{2.5} = fine particulate matter

Source: CalEEMod Version 2013.2.2, EPA 1996. See Air Quality and Climate Change Evaluation (Atkins 2015a) for data sheets.

Table 3.1-9 Estimated Annual Operational Air Pollutant Emissions

Phase	Maximum Annual Emissions (tons/year)		
	VOC	NO _x	CO
Vehicular Sources	<1	1	2
Generator Testing	--	<1	<1
Natural Gas	<1	4	3
Area Sources	<1	0	<1
Total	<1	5	5
Federal Threshold	100	100	100
Significant Impact?	No	No	No

Source: CalEEMod Version 2013.2.2. See Attachment A for model output.

Issue 3: Sensitive Receptors

Would implementation of Alternatives 1, 2, or 3, or associated facilities expose sensitive receptors to substantial pollutant concentrations?

The County of San Diego defines sensitive receptors for air quality effects as residences, schools, hospitals, resident care facilities, day-care centers, or other facilities that may house individuals with health conditions that are adversely affected by changes in air quality. The two primary emissions of concern regarding health effects for sensitive receptors are CO and DPM. An analysis of the potential for construction or operation of Alternatives 1, 2, and 3 to expose sensitive receptors to substantial pollutant concentrations of CO is provided below.

Carbon Monoxide Hot Spots

Areas with high vehicle density, such as congested intersections and parking garages, have the potential to create high concentrations of CO, known as CO hot spots. An air quality impact is considered significant if CO emissions create a hot spot where either the California 1-hour standard of 20 parts per million (ppm) or the federal and California 8-hour standard of 9.0 ppm is exceeded. This typically occurs

at severely congested intersections (Level of Service [LOS] E or worse). The traffic impact analysis prepared for Alternatives 1, 2, and 3 determined that all intersections serving project construction trips would operate at LOS C or better with or without project traffic (VRPA 2015). The project would contribute fewer trips during operation of the project than during construction. Therefore, intersections would not be congested as a result of the project and CO hot spots would not occur. This impact would be less than significant.

Toxic Air Contaminants

Construction

DPM results from operation of construction equipment. SDAPCD and County of San Diego have not adopted thresholds for determining the significance of construction emissions related to sensitive receptors and DPM. However, SDAPCD's AQIA thresholds were designed to ensure that emissions from stationary sources would not result in pollutant emissions that exceed the NAAQS and CAAQS and result in unsafe emissions in the surrounding community. These thresholds are based on the emissions source being located in one place for many years; therefore, these thresholds are conservative for construction. As shown above in Table 3.1-6, construction of Alternatives 1, 2, and 3 would result in less than significant particulate matter emissions during construction, including fugitive dust and diesel emissions from construction equipment, based on the AQIA thresholds. Additionally, DPM is considered to have a long-term health effect for exposure of more than eight years (OEHHA 2003). Construction activities are short-term, lasting less than one year. Therefore, emissions would not result in a significant long-term health risk to surrounding receptors.

Operation

CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* lists land uses that are considered major air toxic emitters (CARB 2005). These land uses are generally industrial and processing land uses that require a permit from SDAPCD to operate, including chrome plating facilities, refineries, rail yards, and distribution centers. Operation of Alternatives 1, 2, and 3 include the passive conveyance of water through a pipeline, and operation of a disinfection facility, potential pump station, and meter station. None of these facilities are classified as toxic emitters. Additionally, the occasional minor diesel emissions that occur from monthly generator testing at the disinfection facility and pump station would not significantly contribute to long-term diesel particulate exposure. Therefore, implementation of Alternatives 1, 2, and 3 would not expose any existing sensitive receptors to substantial pollutant concentrations.

Issue 4: Objectionable Odors

Would implementation of Alternatives 1, 2, or 3, or associated facilities create objectionable odors affecting a substantial number of people?

Offensive odors can present a nuisance to the general public but seldom result in permanent physical damage. Offensive odors may cause concern to the public, especially in residential neighborhoods located near major sources of odor.

Construction

CARB's *Air Quality and Land Use Handbook* (CARB 2005) includes a list of the most common sources of odor complaints received by local air districts. Typical sources of odor complaints include facilities such as sewage treatment plants, landfills, recycling facilities, petroleum refineries, and livestock operations. Construction activities are not a typical source of nuisance odors, although construction could result in

minor amounts of odorous compounds associated with diesel heavy equipment exhaust or evaporation of VOCs within paint or other coatings. The smell of diesel exhaust is mostly due to the presence of sulfur and the creation of hydrocarbons during combustion (Nett Technologies 2010). As shown above in Table 3.1-6, construction of Alternatives 1, 2, and 3 would not result in significant emissions of sulfur oxides (SO_x). Additionally, construction equipment would only operate at one segment of the alignment at a time and for a limited duration. Therefore, an individual receptor would not be exposed to construction emissions for the duration of the construction period. Odorous hydrocarbons emissions would dissipate beyond the emissions sources and would only affect receptors in the immediate vicinity of the construction site. Construction-related operations are temporary in nature and would cease at the completion of construction. Therefore, odor effects associated with construction would be less than significant.

Operation

Based on CARB's list of common sources of odor complaints, potable water projects do not typically result in a source of nuisance odors associated with operation. Therefore, operation of Alternatives 1, 2, and 3 would not result in a significant odor impact.

3.1.5.2 No Action Alternative

Under the No Action Alternative, no construction, including pipelines or related infrastructure, would occur and the project area would remain in its current condition. Therefore, the No Action – No Project would not result in any effects related to consistency with regional air quality plans, consistency with air quality standards, sensitive receptors, or objectionable odors because no construction would occur.

3.1.6 Mitigation Measures

Effects related to consistency with applicable regional air quality plans and air quality standards, cumulatively considerable net increase in pollutant emissions, sensitive receptors, and odors would be less than significant without mitigation. No project-specific mitigation measures are required beyond practices mandated by applicable legal frameworks.

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3.2 Biological Resources

This section analyzes the affected environment of Alternatives 1, 2, and 3, and associated facilities pertaining to biological resources. The information presented in this section is based on the Biological Resources Technical Report (AECOM 2015).

3.2.1 Environmental Setting/Affected Environment

3.2.1.1 Biological Surveys

Biological surveys for the proposed project were performed from March 2013 through September 2013, and December 2013 through August 2014. Biological surveys conducted for the proposed project include vegetation mapping surveys, a jurisdictional wetland delineation, rare plant surveys, and focused protocol surveys for San Diego fairy shrimp, Riverside fairy shrimp, Quino checkerspot butterfly, western burrowing owl, coastal California gnatcatcher, and least Bell's vireo.

Surveys and assessments to inventory and evaluate biological resources were conducted within the footprint of proposed Alternatives 1, 2, and 3; the associated facilities; and a buffer around each alignment. For those resources more mobile or more sensitive to indirect effects, such as avian species, a 500-foot-radius buffer was applied to the disturbance footprints (Figure 3.2-1). For those resources less mobile or sensitive to indirect effects, such as invertebrate species, a 250-foot-radius buffer was applied to the disturbance footprint. For the jurisdictional delineations, the extent of the proposed disturbance footprints (permanent and temporary direct impact area) was assumed as the study area.

Jurisdictional delineations of federal waters were conducted in September of 2013, and October and December of 2014. Areas meeting the criteria for jurisdiction under CDFW and the San Diego RWQCB were also evaluated and mapped. RWQCB jurisdiction is congruent with that of USACE jurisdiction.

Rare plant surveys were conducted in March, April, and May of 2013, and February, March, and June of 2014, to coincide with optimal blooming periods of the various sensitive species with potential for occurrence within the 250-foot study area.

The suitability of habitats for special-status wildlife species within the 500-foot study area was evaluated during general wildlife surveys. These general wildlife surveys occurred concurrently with focused protocol surveys. These surveys coincided with times of the year when the wildlife species are more readily observable in the field (e.g., breeding season). Wildlife sign, track, and direct observations were recorded during focused protocol surveys. Additional details regarding the survey methods are provided in the Biological Resources Technical Report (AECOM 2015).

3.2.1.2 Existing Biological Resources

Vegetation Communities

Vegetation mapping was conducted with a 500-foot study area buffer. Sixteen vegetation communities and land cover types were mapped within the study area, and are described below, in Table 3.2-1 and Figure 3.2-2. The majority of vegetation within the study area consists of three open canopy plant communities. Several small streams and swales within the project study area support a number of wetland communities. A brief discussion of the different vegetation communities within the study area is provided with additional detail in the Biological Resources Technical Report (AECOM 2015).

Table 3.2-1 Vegetation Communities and Other Cover Types within the Study Area	
Vegetation Communities Other Cover Types	Total (Acres)
Riparian and Wetland	
Alkali Seep	2.98
Freshwater Marsh	0.52
Freshwater Seep	2.53
Mulefat Scrub	0.18
Road Pools	0.06
Southern Arroyo Willow Riparian Forest	1.22
Southern Willow Scrub	3.63
Tamarisk Scrub	1.87
Vernal Pools	0.01
Subtotal Riparian and Wetland ⁽¹⁾	12.99
Upland	
Diegan Coastal Sage Scrub	157.48
Native Grassland	30.56
Nonnative Grassland	182.55
Southern Mixed Chaparral	3.96
Subtotal Upland ⁽¹⁾	374.55
Other Cover Types	
Disturbed Habitat	111.67
Eucalyptus Woodland	0.11
Urban/Developed	58.43
Subtotal Other Cover Type ⁽¹⁾	170.21
Total⁽¹⁾	557.75
⁽¹⁾ All acreages are rounded to the nearest thousandth.	
Source: AECOM 2015	

Riparian and Wetland

Vernal Pools. Vernal pools are ephemeral plant communities that support unusual flora and fauna. Several topographic and soil-related conditions are prerequisites for the occurrence of vernal pools. The topography is often a series of microdepressions (vernal pools) and microhummocks (mima mounds). The depressions collect water from precipitation and runoff from the mima mounds. Indicator species of vernal pools in the 500-foot study area include wooly marbles (*Psilocarphus brevissimus*), pygmy crassula (*Crassula aquatica*), and coast plantain (*Plantago bigelovii*). One vernal pool with indicator species was detected within the 500-foot study area slightly north of Roll Reservoir.

Road Pools. Road pools are sparsely vegetated or unvegetated seasonal ponds that have been altered or created by intensive human disturbance, specifically established roads. Road pools are sensitive because of their potential to provide habitat for federally endangered fairy shrimp species and their similar, although reduced, function as vernal pools. Several road pools that had evidence of ponded water in the winter of 2012/2013 were identified within or on the shoulders of dirt roads in the 500-foot study area, including within the southeastern alignment of Alternative 1, and adjacent to the southeastern segments of Alternatives 2 and 3.

Freshwater Seep. Freshwater seep is a wetland community dominated by perennial herbs, especially sedges and grasses. Freshwater seep is associated with an ephemeral stream in the southeastern

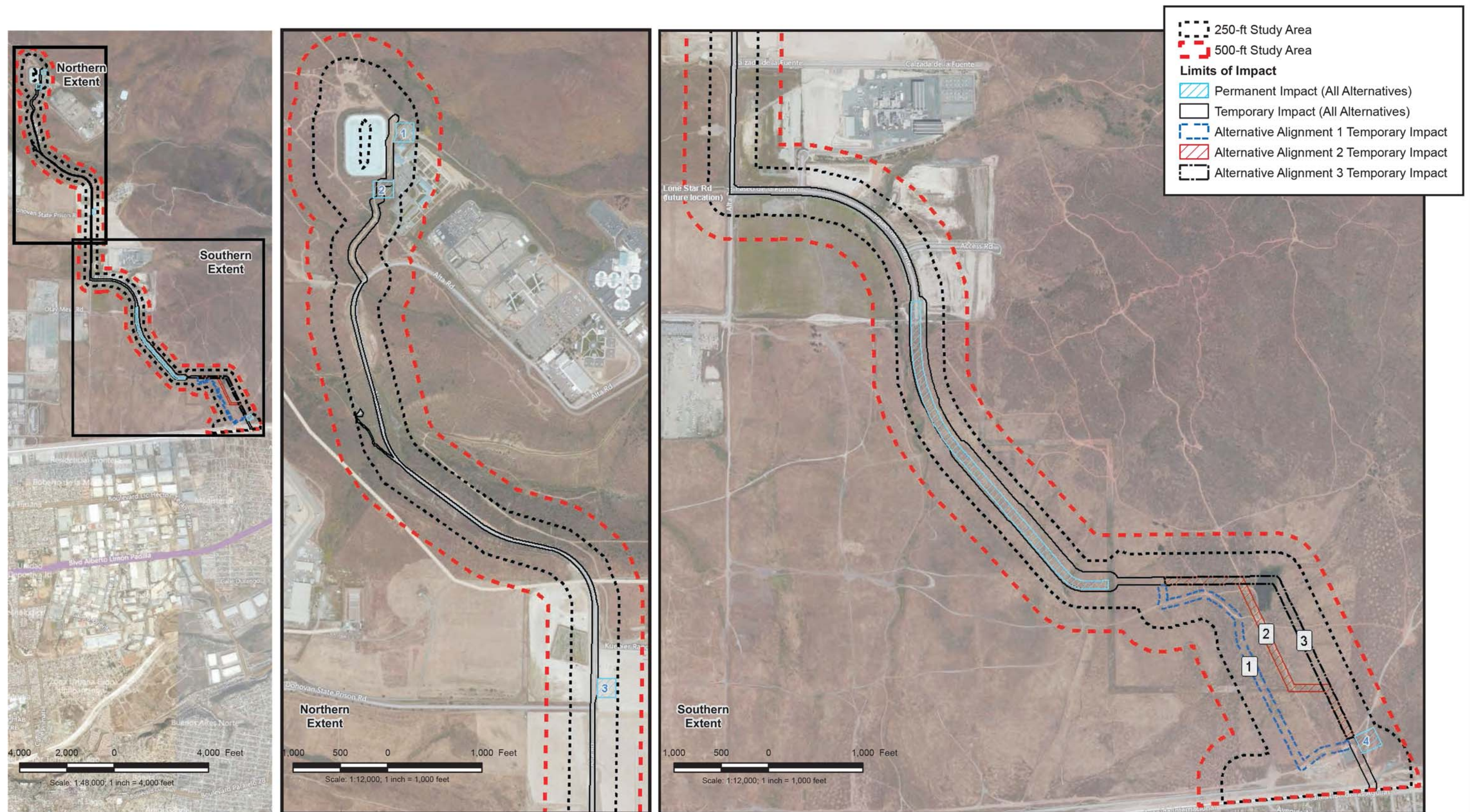


FIGURE 3.2-1
Proposed Project Study Area

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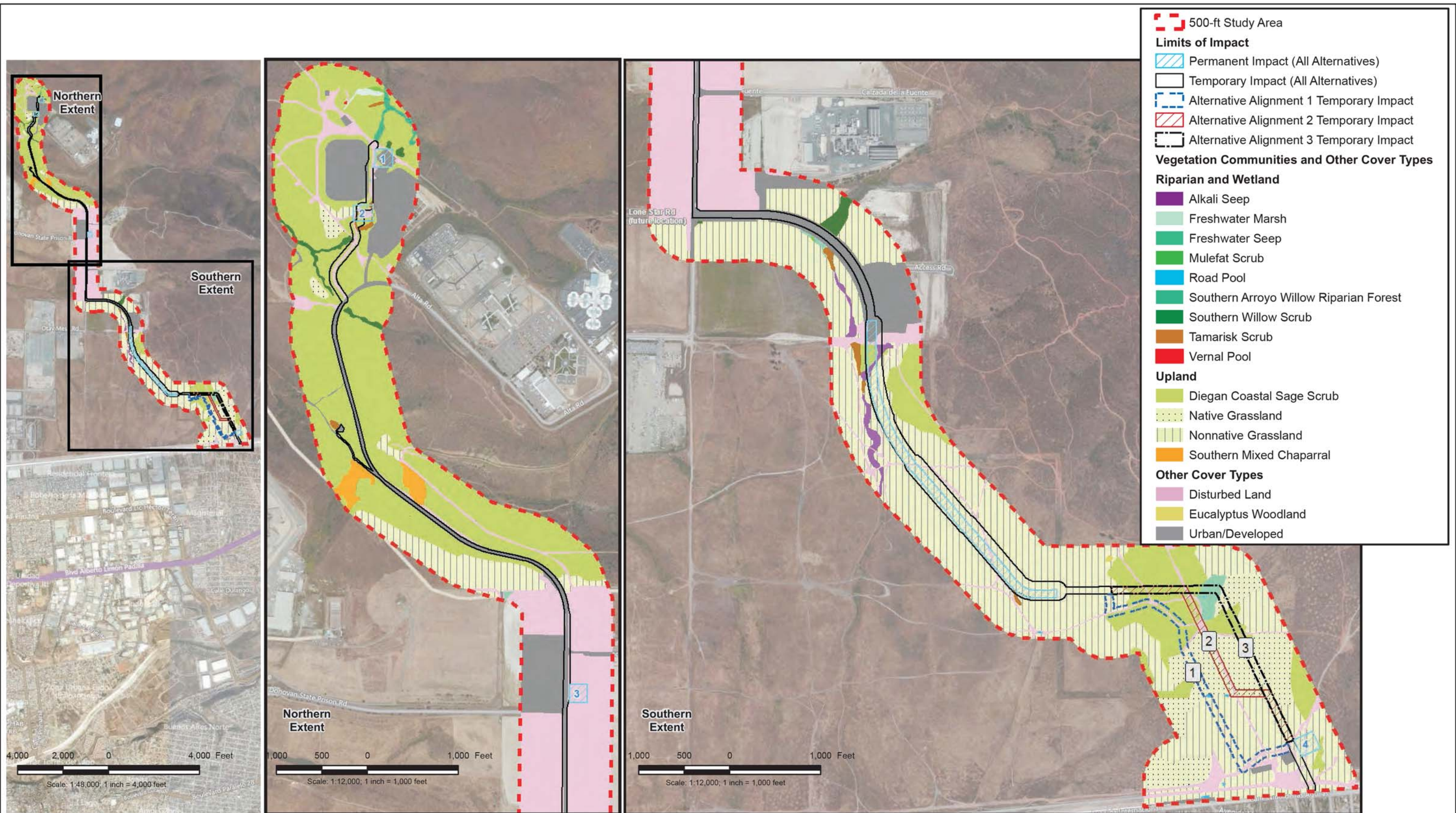


FIGURE 3.2-2
Vegetation Communities

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Otay Mesa Conveyance and Disinfection System Project

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segment of the 500-foot study area, which is artificially impounded by a road berm crossing the broad low-lying area of the drainage.

Alkali Seep. Alkali seep is a community dominated by perennial, emergent monocots that grow in soils that are saturated during at least part of the year. High evaporation rates combined with low flow levels of fresh water create high saline conditions. This was the primary community associated with the ephemeral streams in the southeastern common segment of the 500-foot study area, adjacent to and south of Paseo de la Fuente.

Freshwater Marsh. Freshwater marsh is dominated by perennial, emergent monocots, 4.3 to 6.6 feet tall. Freshwater marsh occurs in wetlands that are permanently flooded by standing fresh water. Dense stands of cattails (*Typha domingensis*) and bulrushes (*Scirpus* spp.) in channel bottoms characterize this habitat within the 500-foot study area north of Roll Reservoir.

Southern Arroyo Willow Riparian Forest. Southern arroyo willow riparian forest is a tall, densely vegetated riparian forest that is dominated by arroyo willow (*Salix lasiolepis*) and other willow species. This community occupies a drainage north of Roll Reservoir supporting a perennially wet stream.

Mulefat Scrub. Mulefat scrub is a riparian shrub community that is strongly dominated by mulefat. This community within the 500-foot study area is densely shrub-dominated and has little to no understory. Tamarisk (*Tamarix ramossissima*) occurs in association with the primarily mulefat-dominated community located north of Roll Reservoir and adjacent to Paseo de la Fuente in the 500-foot study area.

Southern Willow Scrub. Southern willow scrub is a dense, broad-leaved, winter-deciduous riparian thicket dominated by willow species (*Salix* spp.) in association with mulefat. In the northern segment of the 500-foot study area, two small unnamed tributaries to the Otay River cross the 500-foot study area within O'Neal Canyon. These drainages are narrow but are densely occupied by arroyo willow-dominated southern willow scrub with a variety of understory species, including seep monkeyflower (*Mimulus guttatus*). In addition, a relatively large area of sparse southern willow scrub occurs in a detention basin and restoration area on the north side of Paseo de la Fuente within the 500-foot study area.

Tamarisk Scrub. Tamarisk scrub is a riparian scrub community of nonnative species of the genus *Tamarix*. This community occurs in drainages where major disturbance has eliminated most native species. The tamarisk scrub habitat within the 500-foot study area also has a component of mulefat in many areas, and has displaced some of the native alkali seep habitat, particularly in two small areas of the ephemeral drainage adjacent to Paseo de la Fuente and future Lone Star Road in the 500-foot study area.

Upland Vegetation Communities

Diegan Coastal Sage Scrub. Diegan coastal sage scrub is composed of low, soft-woody subshrubs to about three feet high. This community occurs on shallow soils or on dry sites such as steep, south-facing slopes or clay-rich soils that are slow to release stored water. Within the 500-foot study area, coastal sage scrub is the most prevalent native vegetation community. This vegetation type occurs throughout the northern segment of the 500-foot study area from O'Neal Canyon north to Roll Reservoir, and also occurs in large patches in the southeastern segment of the 500-foot study area adjacent to future Lone Star Road. Disturbed Diegan coastal sage scrub was identified and mapped in several areas.

Southern Mixed Chaparral. Southern mixed chaparral is a diverse mixture of shrubs that occurs in the foothills of San Diego County and northern Baja California. Within the 500-foot study area, southern mixed chaparral occurs in a relatively small area slightly south of O’Neal Canyon on north-facing slopes.

Native Grassland. Native grasslands are communities dominated by perennial bunchgrasses such as needlegrass (*Stipa* spp.). This community was concentrated in the southeastern segment of the 500-foot study area slightly north of the United States-Mexico border within the footprint of Alternatives 1, 2, and 3, and in a couple of small patches slightly south of Roll Reservoir. It was characterized by purple needlegrass (*Nassella pulchra*), brome grasses (*Bromus* spp.), and annual and perennial forbs such as fascicled tarplant (*Deinandra fasciculata*), Douglas’ silver puffs (*Microseris douglasii* ssp. *platycarpa*), Cleveland’s golden stars (*Bloomeria clevelandii*), and California blue-eyed grass.

Nonnative Grassland. This community occurs throughout the 500-foot study area making up the majority of habitat in the southern segment of the 500-foot study area, from Paseo de la Fuente south to the United States-Mexico border. Dominant grasses within this community in the 500-foot study area include ripgut brome (*Bromus diandrus*), red brome (*Bromus madritensis* ssp. *rubens*), soft chess (*Bromus hordeaceus*), wild oats (*Avena* spp.), and rat-tail fescue (*Vulpia myuros*). Nonnative disturbance-related annuals such as stork’s bill (*Erodium cicutarium*) and star thistle (*Centaurea solstitialis*) are codominants in this community. Although named as a nonnative community, this community has significant biological value since it provides foraging and nesting habitat for sensitive wildlife species, for example, northern harrier (*Circus cyaneus*) and western burrowing owl (*Athene cunicularia*).

Other Cover Types

Disturbed Habitat. Disturbed habitat is any land permanently altered by previous human activity, including grading, repeated clearing, intensive agriculture, vehicular damage, or dirt roads. Disturbed habitat is found adjacent to Alta Road at the intersection of Paseo de la Fuente and Alta Road north to O’Neal Canyon, where several large lots were graded and prepared for future industrial development.

Urban/Developed. Developed areas support no native vegetation and may be additionally characterized by the presence of built structures such as buildings or paved roads. Developed areas may include ornamental vegetation. Throughout the 500-foot study area, developed land includes paved roads and associated ornamental vegetation.

Eucalyptus Woodland. This community is dominated by several species of eucalyptus (*Eucalyptus* spp.). Eucalyptus woodland is limited to a small stand of eucalyptus trees on the low hilltop in the southeastern portion of the 500-foot study area.

Jurisdictional Waters and Wetlands

Federal waters of the U.S. are those areas regulated by Section 404 of the Clean Water Act (CWA), which gives the EPA and USACE regulatory and permitting authority. Waters of the state are regulated by the RWQCB and the CDFW. Waters of the state are defined under Section 401 of the CWA as “any surface water or groundwater, including saline waters, within the boundaries of the state.” RWQCB jurisdiction is considered congruent with that of USACE jurisdiction.

In total, the jurisdictional delineation survey identified 0.26 acre of U.S. and state jurisdictional waters within the delineation survey area. The delineation survey area is intended to be coincident with the limits of the proposed construction direct impact footprint. The jurisdictional delineation survey extends beyond the final proposed disturbance area in some locations due to the modifications to the footprint after surveys were complete. The survey identified a total of 0.14 acre of potential jurisdictional waters

of the U.S. and state (USACE, RWQCB, and CDFW) within the delineation survey area for the proposed project, as shown in Table 3.2-2 and in Figure 3.2-3. The 0.14 acre of waters of the U.S. and state is composed of approximately 0.04 acre of southern willow scrub, 0.08 acre of concrete-lined channel and a culvert, and 0.02 acre of nonvegetated channel. The survey also identified a total of 0.12 acre of CDFW potential jurisdiction waters within the delineation survey area for the proposed project, as shown in Table 3.2-2 and Figure 3.2-3. The 0.12 acre of CDFW potential jurisdictional waters is composed of tamarisk scrub.

Table 3.2-2 Potential Jurisdictional Waters of the U.S. and State Occurring within the Delineation Survey Area⁽¹⁾				
Type of Potential Jurisdictional Waters	Type of Habitat (Holland 1986; Oberbauer et al. 2008)	Type of Habitat (Cowardin et al. 1979)	Regulatory Authority	Area of Aquatic Resource in Survey Area (acres)⁽³⁾
<i>Jurisdictional Waters of the U.S. and State</i>				
Wetland	Southern Willow Scrub ⁽²⁾	Palustrine; Scrub/Shrub Broad-leaved, Deciduous, Seasonally Flooded, Fresh	CDFW, RWQCB, and USACE	0.04
Other Waters (Drainage Features [OHWM])	Culvert, concrete-lined channel	N/A	CDFW, RWQCB, and USACE	0.08
Other Waters (Drainage Features [OHWM])/ Nonvegetated Channel	Nonvegetated channel	Riverine; Unconsolidated Bottom, Sand, Intermittently Flooded, Fresh	CDFW, RWQCB, and USACE	0.02
Subtotal Potential Jurisdictional Waters of the U.S. and State				0.14
<i>Jurisdictional Waters Exclusively CDFW</i>				
Riparian	Tamarisk Scrub ⁽²⁾	N/A	CDFW	0.12
Subtotal Potential Jurisdictional Waters and State				0.12
Total Potential Jurisdictional Waters of the U.S. and State				0.26

N/A = not applicable; OHWM = ordinary high water mark

⁽¹⁾ Based on the total area of potential waters of the U.S. (including wetlands) delineated within the survey area. Final acreages of waters of the U.S. will be based on the Jurisdictional Determination (JD) process per the March 30, 2007, USACE Jurisdictional Determination Form Guidebook; the June 5, 2007, Approved JD Form; the June 5, 2007, Joint Guidance Memorandum; and RGL 08-02 and December 2, 2008, Guidance Memorandum.

⁽²⁾ The vegetation mapping efforts resulted in these vegetation communities and three additional types of hydrophytic vegetation communities (e.g., alkali seep, freshwater seep, and southern arroyo willow riparian forest). It should be noted that the methodology for mapping vegetation communities differs from the strict delineation protocols for determining a defined wetland. The presence and/or area of potential jurisdictional waters in the form of wetland (e.g., hydrophytic vegetation/hydric soils/wetland hydrology) differs from the mapped vegetation community based upon differing criteria in vegetation mapping and formal field delineations.

⁽³⁾ Acreage of potential waters of the U.S. (including wetlands) occurring within the survey area was determined by using ArcGIS. All acreages are rounded to the nearest hundredth.

Source: AECOM 2015

Sensitive Communities

Special-Status Plant Species

Species are considered to have special status if they meet at least one of the following criteria:

- Covered under the federal or California Endangered Species Act (ESA)
- CDFW species of special concern
- CDFW fully protected species

- Listed as having a California Native Plant Society (CNPS) List 1A, 1B, 2, 3, or 4, as described in Table 3.2-3

Biological survey observed a total of 174 plant species within the 250-foot study area. A total of 76 special-status plant species were evaluated for potential to occur in the 250-foot study area based on database searches, literature review, and proposed project surveys. Of these 76 special-status plant species evaluated, 13 were detected during surveys with locations shown in Figure 3.2-4. Listed species are those that are considered endangered or threatened by the U.S. Fish and Wildlife Service (USFWS) under the federal or state ESA. The survey detected one federal and state-listed species, Otay tarplant (*Deinandra conjugens*), just outside the 250-foot study area. Table 3.2-3 provides a summary of CNPS biological resource sensitivity ranking used to describe the sensitivity of these resources. Table 3.2-4 summarizes the 12 CNPS listed special-status plant species detected within the 250-foot study area.

Federally Listed Plant Species

Otay Tarplant. Otay tarplant, a CNPS 1B.1 federally and state listed plant species, is native to San Diego County with a current distribution extending from northern Baja California in Mexico, into southern California. Otay tarplant is an annual herb growing up to 1.6 feet in height with a solid, bristly stem. The lower leaves are hairy and lobed or toothed, and measure up to approximately 2 inches long. This species prefers habitat in clay soils, coastal scrub, and valley and foothill grassland. Otay tarplant was detected during botanical surveys in clay soils at a former restoration site just outside the 250-foot study area east of future Lone Star Road. Fewer than 10 plants were detected. The southern region of San Diego County in which the plant lives is heavily affected by development and other processes. The species' habitat now exists in a fragmented state. Besides outright habitat destruction, the plant is affected by several processes of habitat degradation including weed introduction, off-road vehicle use, and trash dumping.

Table 3.2-3 Summary of California Native Plant Society List Sensitivity Rankings	
CNPS List	Description
List 1A – Presumed Extinct in California	Thought to be extinct in California based on a lack of observation or detection for many years.
List 1B – Rare or Endangered in California	Species that are generally rare throughout their range, and are also judged to be vulnerable to other threats such as declining habitat.
List 2 - Rare or Endangered in California, More Common Elsewhere	Species that are rare in California, but more common outside of California.
List 3 – Need More Information	Species that are thought to be rare or in decline but CNPS lacks the information needed to assign to the appropriate list. In most instances, the extent of surveys for these species is not sufficient to allow CNPS to accurately assess whether these species should be assigned to a specific list. In addition, many of the List 3 species have associated taxonomic problems such that the validity of their current taxonomy is unclear.
List 4 – Plants of Limited Distribution	Species that are currently thought to be limited in distribution or range whose vulnerability or susceptibility to threat is currently low. In some cases, as noted above for List 3 species, CNPS lacks survey data to accurately determine status in California. CNPS recommends that species currently included on this list should be monitored to ensure that future substantial declines are minimized.
List is followed by threat code (e.g. CNPS List 1B.2)	.1 - Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
	.2 – Fairly endangered in California (20-80% occurrences threatened)
	.3 – Not very endangered in California (<20% of occurrences threatened)

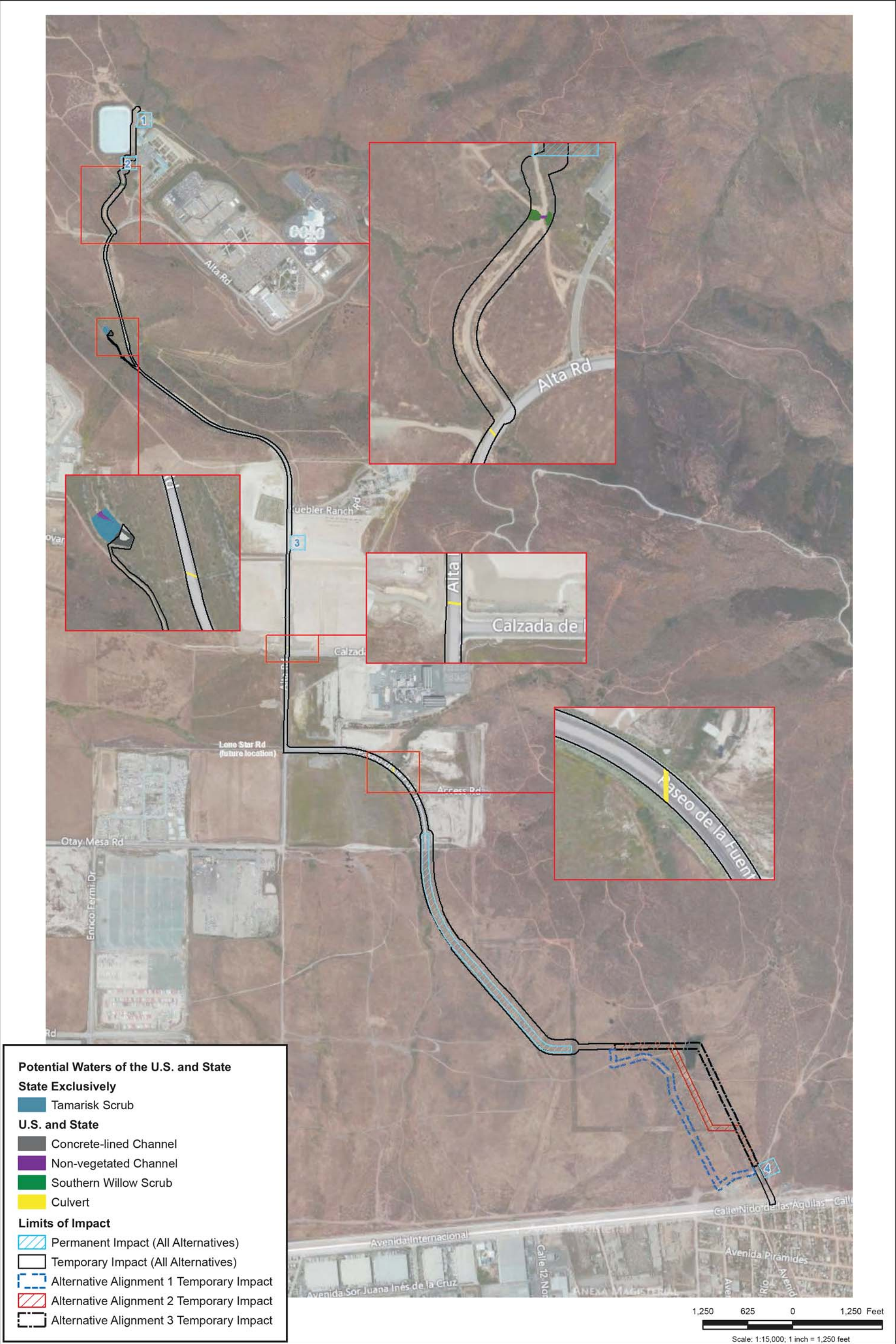


FIGURE 3.2-3
Potential Jurisdictional Waters of the U.S. and State

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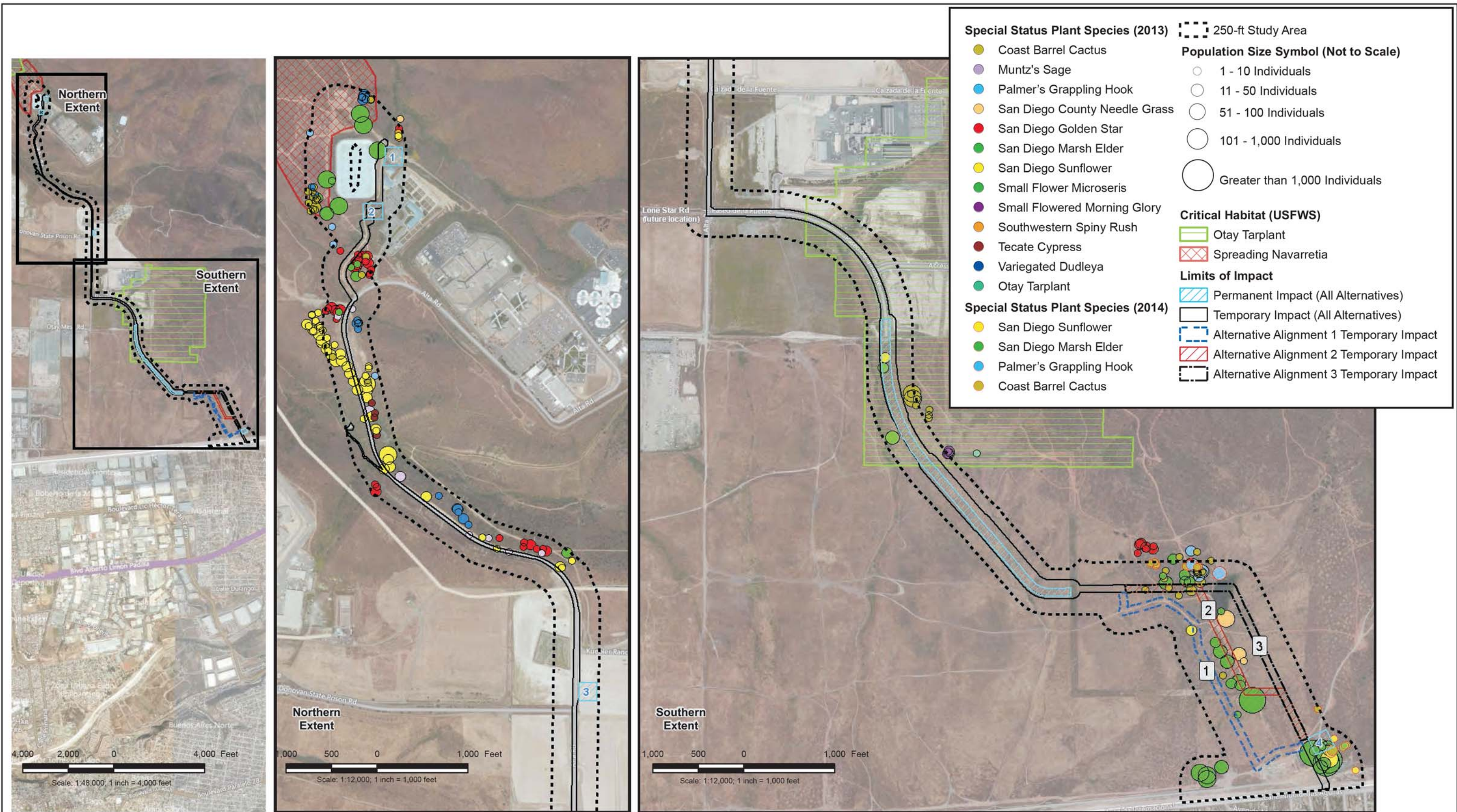


FIGURE 3.2-4
Special Status Plant Species Results

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Table 3.2-4 CNPS Special-status Plant Species Known or with Potential to Occur in the 250-foot Study Area

Species	Status	General Habitat Description ⁽¹⁾	Microhabitat Description	Rationale ⁽²⁾
San Diego sunflower <i>Bahiopsis laciniata</i>	CNPS: 4.2	Chaparral and coastal scrub. Elevation 197–2,460 feet. Perennial shrub, blooms February–August.	Arid, open canopy coastal sage scrub.	Present within the 250-foot study area. Approximately 1,925 plants of this species were detected within coastal sage scrub in the northern and southeastern segments of the 250-foot study area during project surveys.
San Diego goldenstar <i>Bloomeria clevelandii</i>	CNPS: 1B.1	Clay, chaparral, coastal scrub, valley and foothill grassland, and vernal pools. Elevation 164–1,526 feet. Perennial bulbiferous herb, blooms April–May.	Undocumented	Present. The species was detected during project surveys throughout the northern segment of the 250-foot study area and in a cluster within coastal sage scrub openings in the southeastern segment of the 250-foot study area. Approximately 554 plants were detected during botanical surveys.
small-flowered morning glory <i>Convolvulus simulans</i>	CNPS: 4.2	Clay, serpentine seeps, chaparral (openings), coastal scrub, and valley and foothill grassland. Elevation 98–2,297 feet. Annual herb, blooms March–June.	Friable clay soils devoid of shrubs in openings in chaparral, sage scrub, and grasslands.	Present within the 250-foot study area. This species was detected in a clay lens in small numbers in the southeastern segment of the 250-foot study area during project surveys. Approximately 60 plants were detected during surveys.
variegated dudleya <i>Dudleya variegata</i>	CNPS: 1B.2	Clay habitat, chaparral, cismontane woodland, coastal scrub, valley and foothill grassland, and vernal pools. Elevation 10–1,903 feet. Perennial herb, blooms April–June.	Openings in sage scrub, chaparral, open grasslands, and isolated rocky substrates, and found near vernal pools. Soils include stockpen gravelly loams and Redding gravelly loams.	Present within the 250-foot study area. This species was detected in small numbers in clay soils within coastal sage scrub in the northern segment of the 250-foot study area during project surveys. Approximately 200 plants were detected during surveys.
coast barrel cactus <i>Ferocactus viridescens</i>	CNPS: 2.1	Chaparral, coastal scrub, valley and foothill grassland, and vernal pools. Elevation 10–1,476 feet. Perennial stem succulent, blooms May–June.	Diegan sage scrub hillsides, often at the crest of slopes and growing in cobbles, occasionally found on the periphery of vernal pools and mima mounds. Soil types include San Miguel-Exchequer rocky silt loams and Redding gravelly loams.	Present within the 250-foot study area. This species was detected on slopes and ridges of coastal sage scrub during surveys in both the northern and southeastern segments of the 250-foot study area. A total of approximately 688 plants were detected during surveys.
Palmer's grapplinghook <i>Harpagonella palmeri</i>	CNPS: 4.2	Clay habitat, chaparral, coastal scrub, and valley and foothill grassland. Elevation 66–3,133 feet. Annual herb, blooms March–May.	Clay vertisols with open grassy slopes and open Diegan sage scrub. Diablo clays are favored on the coast.	Present within the 250-foot study area. The species was detected during project surveys in clay soils in coastal sage scrub habitat in the southeastern and the northern segments of the 250-foot study area. A total of approximately 254 plants were detected during surveys.
Tecate cypress <i>Hesperocyparis forbesii</i>	CNPS: 1B.1	Clay, gabbroic, metavolcanic habitat; closed-cone coniferous forest; and chaparral. Elevation 262–4,921 feet. Perennial evergreen tree.	Closed-cone coniferous forest and southern mixed chaparral. Soil types include San Miguel-Exchequer soils.	Present within the 250-foot study area. The species was detected in O'Neal Canyon on the manufactured slope during project surveys. A total of 10 individuals were detected during surveys.

Table 3.2-4 CNPS Special-status Plant Species Known or with Potential to Occur in the 250-foot Study Area

Species	Status	General Habitat Description ⁽¹⁾	Microhabitat Description	Rationale ⁽²⁾
San Diego marsh-elder <i>Iva hayesiana</i>	CNPS: 2.2	Marshes, swamps, and playas. Elevation 33–1,640 feet. Perennial herb, blooms April–October.	Creeks and intermittent streambeds, open riparian canopy allowing substantial sunlight.	Present within the 250-foot study area. The species was detected in drainages within alkali marsh habitat in the southeastern segment of the 250-foot study area during project surveys. A total of approximately 125 plants were detected during surveys.
spiny rush <i>Juncus acutus</i> ssp. <i>leopoldii</i>	CNPS: 4.2	Coastal dunes (mesic) meadows and seeps (alkaline seeps), marshes, and swamps (coastal salt); Elevation 3–4,003 feet. Perennial rhizomatous herb, blooms March–June.	Coastal salt marsh at brackish locales, alkaline meadows, and riparian marshes.	Present within the 250-foot study area. The species was detected in drainages within alkali marsh habitat in the northern and southeastern segments of the 250-foot study area during project surveys. A total of eight clumps of plants were detected during surveys.
small-flowered microseris <i>Microseris douglasii</i> ssp. <i>platycarpa</i>	CNPS: 4.2	Clay soils, cismontane woodland, coastal scrub, valley and foothill grassland, and vernal pools. Elevation 49–3,510 feet, annual herb, blooms March–May.	Clay lenses in perennial grasslands and on the periphery of vernal pools, or in broad openings in sage scrub.	Present within the 250-foot study area. This species was detected in clay soils within native grasslands and broad openings of coastal sage scrub during project surveys. Large numbers (over 130,000 plants) were found in the northern and southeastern segments of the 250-foot study area.
Munz's sage <i>Salvia munzii</i>	CNPS: 2.2	Chaparral and coastal scrub. Elevation 378–3,494 feet. Perennial evergreen shrub, blooms February–April.	Chaparral and Diegan sage scrub. Soils include San Miguel-Exchequer rocky silt loams and Olivenhain cobbly loams.	Present within the 250-foot study area. The species was detected in small numbers in coastal sage scrub in the northern segment of the 250-foot study area during project surveys. A total of 95 shrubs of this species were detected during surveys.
San Diego County needle grass <i>Stipa diegoensis</i>	CNPS: 4.2	Rocky, often mesic, chaparral, and coastal scrub. Elevation 33–2,625 feet	Often in rocky soil on steeper slopes in coastal sage scrub or chaparral.	Present within the 250-foot study area. The species was detected in small numbers in coastal sage scrub in the northern segment of the 250-foot study area during project surveys. A total of 304 plants were detected during surveys.

⁽¹⁾ Habitat Descriptions: California Native Plant Society. Rare Plant Database. Accessed: February 2013 at <http://www.cnps.org/cnps/rareplants/>.

⁽²⁾ Rationale citation and microhabitat citation—Reiser, Craig. 1994. Rare plants of San Diego County. Available at <http://sandiego.sierraclub.org/rareplants/003.html>.

Special-Status Wildlife

Project biological surveys documented a total of 131 wildlife species, including 84 bird species, 30 invertebrate species, two amphibian species, eight reptile species, and seven mammal species. A total of 49 special-status wildlife species were evaluated for potential to occur in the 500-foot study area based on database searches, literature review, and proposed project surveys. Of these 49 special-status wildlife species evaluated, 22 were detected during surveys and 27 have some potential to occur within the 500-foot study area. Five federally listed species detected during biological surveys having high potential to occur are discussed below. Table 3.2-5 summarizes the remaining 14 special-status wildlife species also having a high potential to occur. Figure 3.2-5 through Figure 3.2-10 illustrate the prevalence of these special-status wildlife species.

Table 3.2-5 Special-status Wildlife Species Known or with Potential to Occur in the 500-foot Study Area

Species	Sensitivity Status ⁽¹⁾	General Habitat Description	Potential to Occur/Comments
<i>Reptiles</i>			
red-diamond rattlesnake <i>Crotalus ruber</i>	CSC	Chaparral, coastal sage scrub, along creek banks, and in rock outcrops or piles of debris. Habitat preferences include dense vegetation in rocky areas.	This species was documented twice within the 500-foot study area at the north end in the vicinity of O'Neal Canyon.
Blainville's horned lizard <i>Phrynosoma blainvillei</i>	CSC	A variety of habitats including sage scrub, chaparral, and coniferous and broadleaf woodlands. Found on sandy or friable soils with open scrub. Requires open areas, bushes, and fine loose soil.	This species was documented within the 500-foot study area at the north end in the vicinity of O'Neal Canyon.
<i>Birds</i>			
Cooper's hawk <i>Accipiter cooperii</i>	WL	Usually in oak woodlands, but occasionally in willow or eucalyptus woodlands.	This species was documented at multiple locations within the 500-foot study area and a nest was documented at the far north end of the 500-foot study area in a willow-lined canyon.
southern California rufous-crowned sparrow <i>Aimophila ruficeps canescens</i>	WL	Coastal sage scrub, chaparral, and grassland; favors steep and rocky areas. Localized resident.	This species was documented at multiple locations within the 500-foot study area on hillsides with coastal sage scrub.
grasshopper sparrow <i>Ammodramus savannarum</i>	CSC	Nests exclusively in grassland, preferring areas dominated by native bunchgrasses.	This species was detected at multiple locations within the 500-foot study area in areas of extensive grasslands.
western burrowing owl <i>Athene cunicularia hypugaea</i>	CSC	Annual and perennial grasslands, deserts, agricultural areas, disturbed habitat, and scrublands, characterized by low-growing vegetation.	This species was documented at multiple locations within the 500-foot study area, primarily in the south end of proposed project where it was confirmed to be breeding.
northern harrier <i>Circus cyaneus hudsonius</i>	CSC	Coastal lowland, marshes, grassland, agricultural fields. Migrant and winter resident, rare summer resident.	This species was documented at multiple locations within the 500-foot study area, primarily in the south end where an active nest was located.
white-tailed kite <i>Elanus leucurus</i>	FP	Riparian habitats, including oak and sycamore groves, adjacent to grasslands.	This species was documented foraging at multiple locations within the 500-foot study area.
California horned lark <i>Eremophila alpestris actia</i>	WL	Grasslands and open habitats with low, sparse vegetation.	This species was observed in the northern end of the 500-foot study area in grassland and was documented

Table 3.2-5 Special-status Wildlife Species Known or with Potential to Occur in the 500-foot Study Area

Species	Sensitivity Status ⁽¹⁾	General Habitat Description	Potential to Occur/Comments
			nesting in disturbed habitats.
merlin <i>Falco columbarius</i>	WL (wintering)	A winter visitor in open habitats such as grasslands, mudflats, coastal sage scrub, and chaparral.	This species was observed twice within the 500-foot study area, last observed on April 18, 2013.
yellow-breasted chat <i>Icteria virens</i>	CSC	Riparian thickets consisting of willow and other brushy thickets near watercourses.	This species was observed in the central portion of the 500-foot study area in some dense brush. Its presence throughout the breeding season suggests nesting occurred, but this was not confirmed.
loggerhead shrike <i>Lanius ludovicianus</i>	CSC	Year-round resident in grassland, open coastal sage scrub, and chaparral.	This species was documented nesting in the 500-foot study area at the south end of the site.
yellow warbler <i>Setophaga petechia brewsteri</i>	CSC	A fairly common summer breeding resident found along mature riparian woodlands that consist of cottonwood, willow, alder, and ash trees. It is restricted to this increasingly patchy habitat.	This species was documented at the extreme northern end of the 500-foot study area in a willow-lined canyon. Breeding was not confirmed.
Mammals			
San Diego black-tailed jackrabbit <i>Lepus californicus bennettii</i>	CSC	Typical habitats include early stages of chaparral, open coastal sage scrub, and grasslands near the edges of brush.	This species was detected throughout the 500-foot study area. Most occurrences were near canyons and hillsides with coastal sage scrub or chaparral.

⁽¹⁾ Status: **Federal/State listed:** FE = Federally listed endangered, FT = Federally listed threatened, SE = State listed endangered, ST = State listed threatened; **CDFW:** CFP = Fully Protected Species, CSC = Species of Special Concern, WL = Watch List

Federally Listed Wildlife Species

San Diego Fairy Shrimp. San Diego fairy shrimp are federally listed as endangered. San Diego fairy shrimp are restricted to vernal pools in coastal southern California to extreme northwestern Baja California, with San Diego County supporting the largest number of remaining occupied vernal pools. No San Diego fairy shrimp were found within the nine pools that were sampled in the 2013/2014 wet season within the 250-foot study area. Based on surveys conducted between 2000 and 2009, San Diego fairy shrimp are known to occur in the vicinity of the proposed project area and southeast portion of the 250-foot study area (Figure 3.2-5). It is possible that below-average rainfall conditions affected the ability to detect San Diego fairy shrimp.

Riverside Fairy Shrimp. Riverside fairy shrimp is federally listed as endangered. Riverside fairy shrimp has been found in San Diego County on mesa tops, and in grassland, agricultural, coastal sage scrub, and chaparral habitats. Chaparral, coastal sage scrub, and grassland habitats are associated most commonly with San Diego hardpan and claypan basins with suitable soil types to support vernal pools. The primary threat to Riverside fairy shrimp is urban and agricultural development of their habitat. Based on surveys conducted between 2000 and 2009, Riverside fairy shrimp are known to occur in the vicinity of the proposed project and southeast portion of the 250-foot study area (Figure 3.2-5). Of the nine pools sampled in the 2013/2014 wet season for the proposed project, Riverside fairy shrimp were detected in one pool located at the southeastern portion of the 250-foot study area adjacent to Alternative 3.

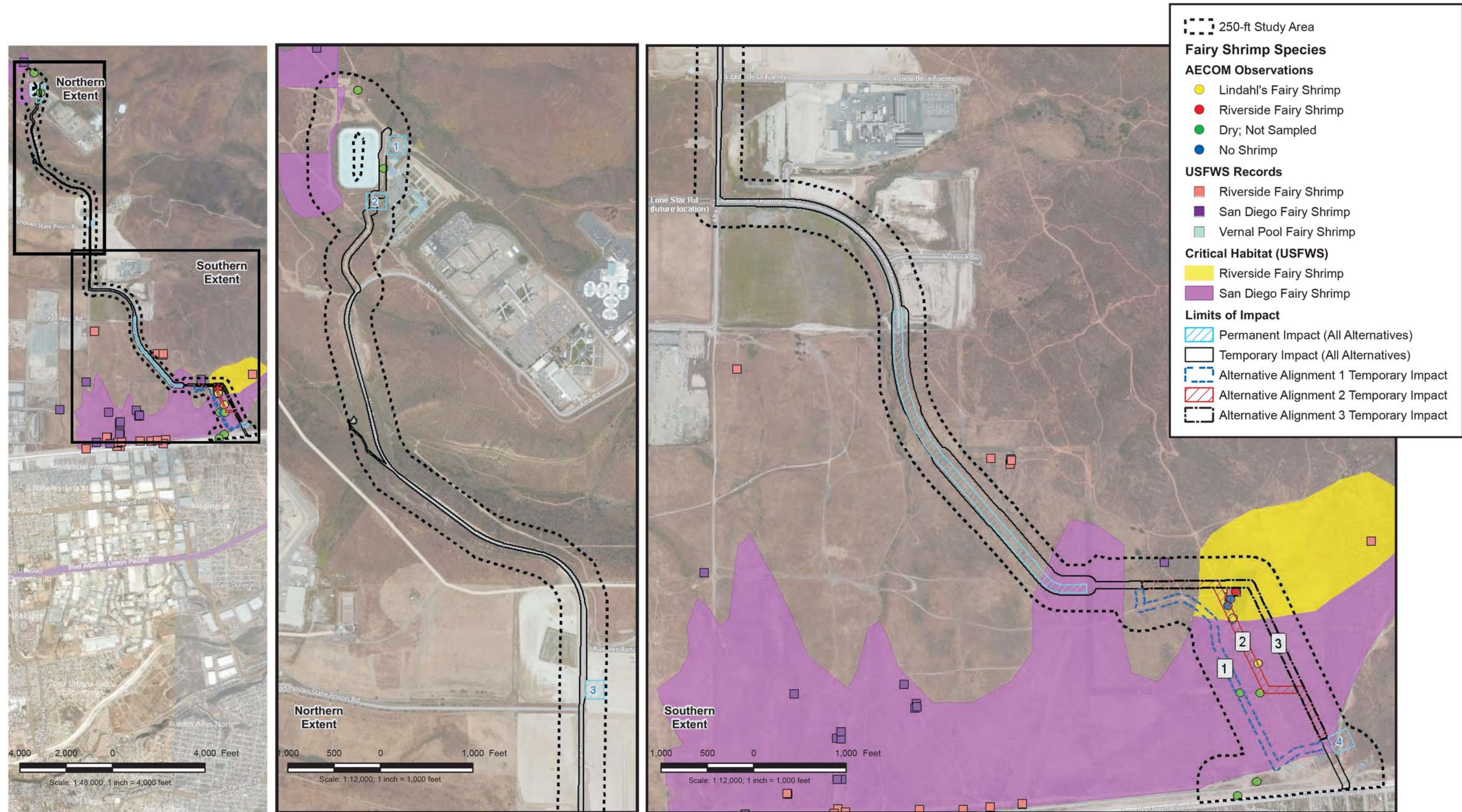


FIGURE 3.2-5
Fairy Shrimp Results

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Quino Checkerspot Butterfly. Quino checkerspot butterfly is a federally listed endangered species. Quino checkerspot butterfly is generally found in native and nonnative grasslands, coastal sage scrub, open chaparral, and other open plant community types where high densities of host plant species occur. In 2013, Quino checkerspot butterfly were observed in the northern portion of the 250-foot study area, primarily concentrated in a 19-acre area on the west side of the existing District-owned Roll Reservoir (Figure 3.2-6). In addition, one individual was detected in the southeastern section of the 250-foot study area to the east of the terminus of future Lone Star Road. Quino checkerspot butterfly has been detected on multiple occasions in the vicinity of the proposed project during surveys for other projects. Potential nectar sources within the 250-foot study area included microseris (*Microseris* sp.), goldfields (*Lasthenia gracilis*), western blue-eyed grass (*Sysyrinchium bellum*), and blue dicks (*Dichelostemma capitatum*). The quality of the habitat decreases heading south with exception of the southeastern portion of the 250-foot study area east of the terminus of future Lone Star Road.

Coastal California Gnatcatcher. Coastal California gnatcatcher is federally listed as a threatened bird and is a California species of special concern. The species generally inhabits Diegan coastal sage scrub and Riversidian coastal sage scrub dominated by California sagebrush and flat-topped buckwheat. Coastal California gnatcatcher is particularly vulnerable to habitat destruction and fragmentation because of their low dispersal rate, reliance on a specific habitat type, and poor breeding success. Surveys focusing on the species were conducted on approximately 105 acres of suitable coastal sage scrub habitat within the 500-foot study area (Figure 3.2-7). Coastal California gnatcatcher were detected during all six protocol surveys in and around the study area. This species was documented at multiple locations within the northern end of the 500-foot study area, including north to northeast of Roll Reservoir and within O'Neal Canyon.

Least Bell's Vireo. Least Bell's vireo is federally and state listed as an endangered bird. Historically, this species was a common summer visitor to riparian habitat throughout much of California. The least Bell's vireo's decline was attributed to loss, degradation, and fragmentation of riparian habitat combined with brood/nest parasitism by the brown-headed cowbird (*Molothrus ater*). Due to concerted programs focused on preserving, enhancing, and creating suitable nesting habitat, the vireo population has steadily increased in population size along several of its breeding drainages in southern California. Focused surveys during the 2013 breeding season for least Bell's vireo were conducted for approximately 9 acres of suitable riparian scrub habitat present within the 500-foot study area (Figure 3.2-8). This species was observed in riparian habitat in the northern end of the 500-foot study area, including within O'Neal Canyon and around Roll Reservoir.

State Listed Species

Least Bell's vireo is the only state-listed species documented during surveys and its background and occurrence are described above.

Migratory Birds

Native avian species present within the 500-foot study area are protected under the conventions implemented by the Migratory Bird Treaty Act (MBTA). Of the 83 avian species detected within the 500-foot study area, 79 are protected under the MBTA. The special-status avian species discussed in the sections above are also protected under the MBTA. Not all migratory birds have special status in the sense that they are rare, threatened, or endangered by local, state, or federal laws, ordinances, regulations, and standards and in need of conservation, but they are protected under the MBTA and California Fish and Game Code (CFG) Sections 3503, 3503.5, and/or 3513. Avian species use the 500-foot study area for nesting, foraging, wintering, and migration purposes.

Critical Habitat

Critical habitat is defined as areas of land, water, and air space that contain the physical and biological features essential for the survival and recovery of endangered and threatened species. Designated critical habitat includes sites for breeding and rearing, movement or migration, feeding, roosting, cover, and shelter. Critical habitat is designated by USFWS for endangered and threatened species per the federal ESA (16 U.S.C. Section 1533[a][3]), and to the extent prudent and determinable. Special management of critical habitat, including measures for water quality and quantity, host animals and plants, food availability, pollinators, sunlight, and specific soil types, is required to ensure the long-term survival and recovery of the identified species.

A review of final critical habitat boundaries indicates that designated critical habitats for the federally endangered Otay tarplant, San Diego fairy shrimp and Riverside fairy shrimp, and Quino checkerspot butterfly, and the federally threatened spreading navarretia and coastal California gnatcatcher are located within the 500-foot study area throughout the proposed project.

A total of 65 acres of Otay tarplant critical habitat occurs near Paseo de la Fuente in the central portion of the 250-foot study area. Designated critical habitat for Otay tarplant also occurs outside of the 250-foot study area northwest of Roll Reservoir (Figure 3.2-4).

A total of 23.8 acres of spreading navarretia critical habitat occurs in the 250-foot study area north and west of Roll Reservoir (Figure 3.2-4). Spreading navarretia was not detected during rare plant surveys. Suitable habitat in the form of vernal pools is present within the 250-foot study area but areas consisting of vernal pools and heavy clay soils have been invaded by many nonnative species and it may be difficult for spreading navarretia to compete with these species.

Designated critical habitat for San Diego fairy shrimp occurs in the extreme north and south ends of the 250-foot study area (Figure 3.2-5). A total of 115.2 acres of San Diego fairy shrimp critical habitat occurs within the boundary of the 500-foot study area. A total of 20.2 acres of Riverside fairy shrimp critical habitat occurs within the southeast corner of the 500-foot study area.

Designated critical habitat for Quino checkerspot butterfly surrounds the eastern boundary of the 500-foot study area, and occurs within the 500-foot study area at the northern and southern ends (Figure 3.2-6). Additionally, a small area of critical habitat occurs just south of Paseo de la Fuente within the 500-foot study area. A total of 126.8 acres of Quino checkerspot butterfly critical habitat occurs within the 500-foot study area.

Designated critical habitat for coastal California gnatcatcher surrounds the eastern boundary of the 500-foot study area, and occurs within the 500-foot study area just south of Paseo de la Fuente (Figure 3.2-7). Additionally, an area of coastal California gnatcatcher critical habitat occurs just north of Kuebler Ranch Road in the center of the 500-foot study area. A total of 7.7 acres of coastal California gnatcatcher critical habitat occurs within the 500-foot study area.

Wildlife Corridors

In an urban context, a wildlife migration corridor is generally a linear landscape feature of sufficient width and buffer to allow wildlife movement between two patches of comparatively undisturbed habitat, or between a patch of habitat and some vital resources. Regional corridors are defined as those linking two or more large patches of habitat, and local corridors are defined as those allowing resident animals to access critical resources (food, cover, and water) in a smaller area that might otherwise be

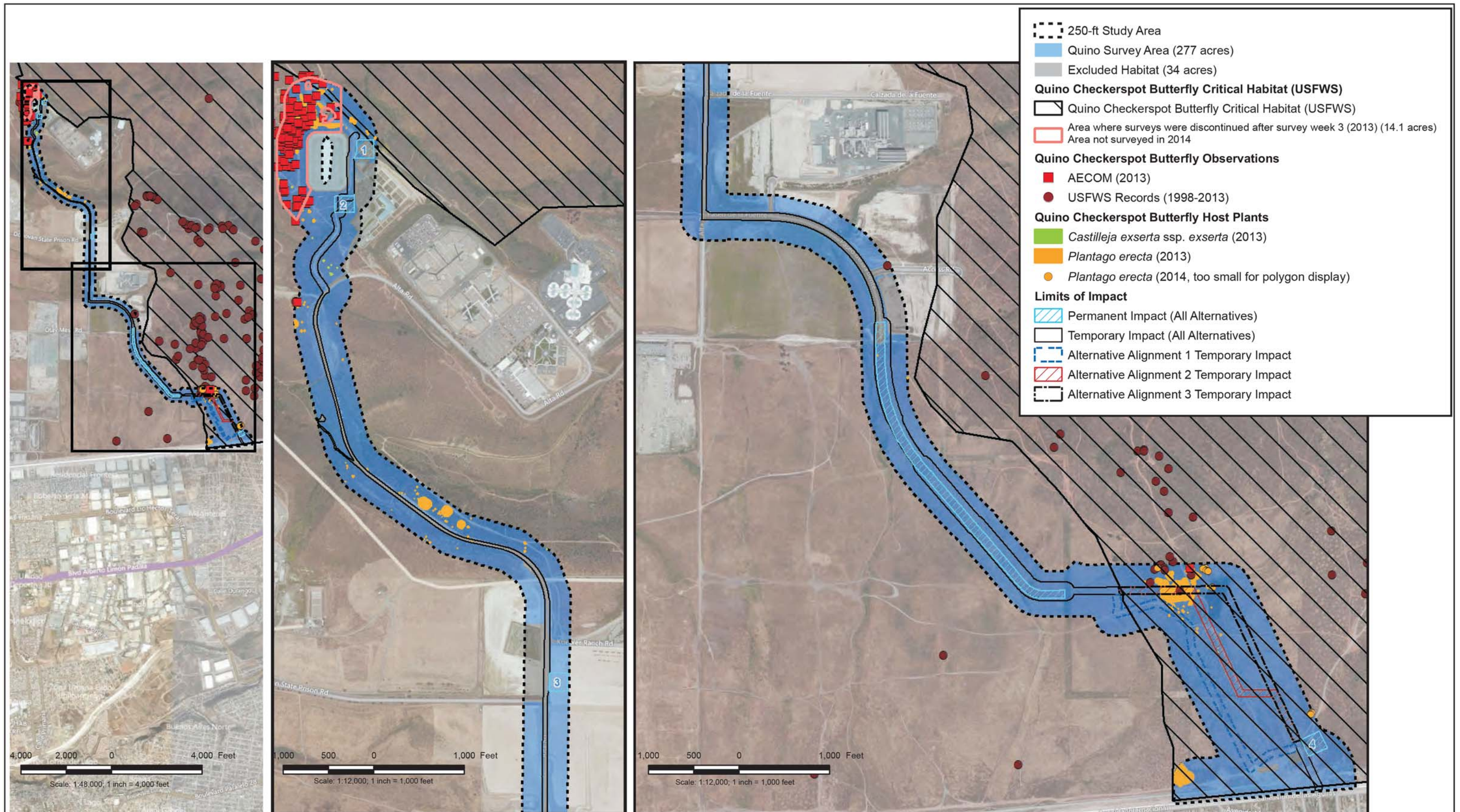


FIGURE 3.2-6
Quino Checkerspot Butterfly Results

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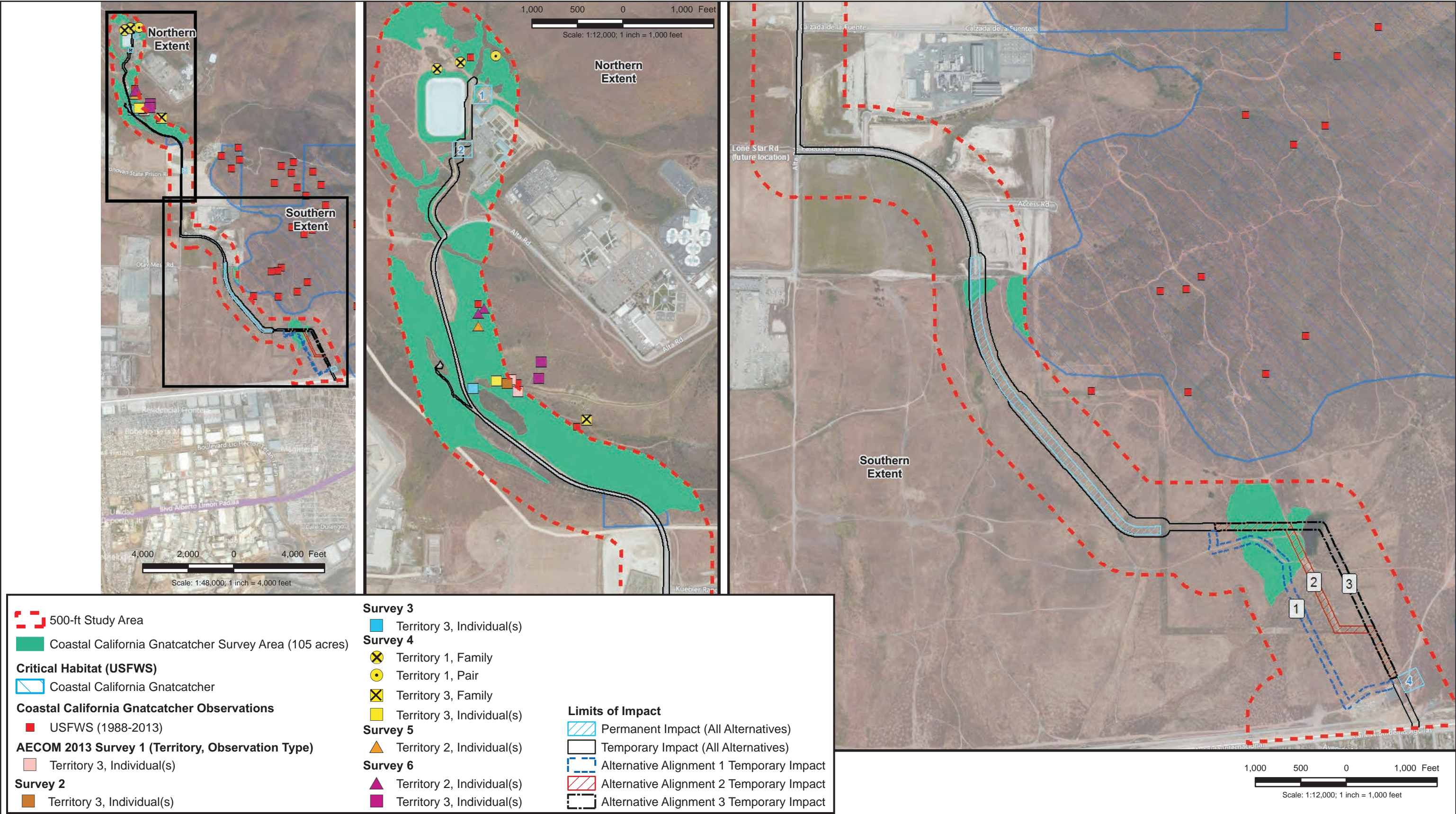


FIGURE 3.2-7
Coastal California Gnatcatcher Results

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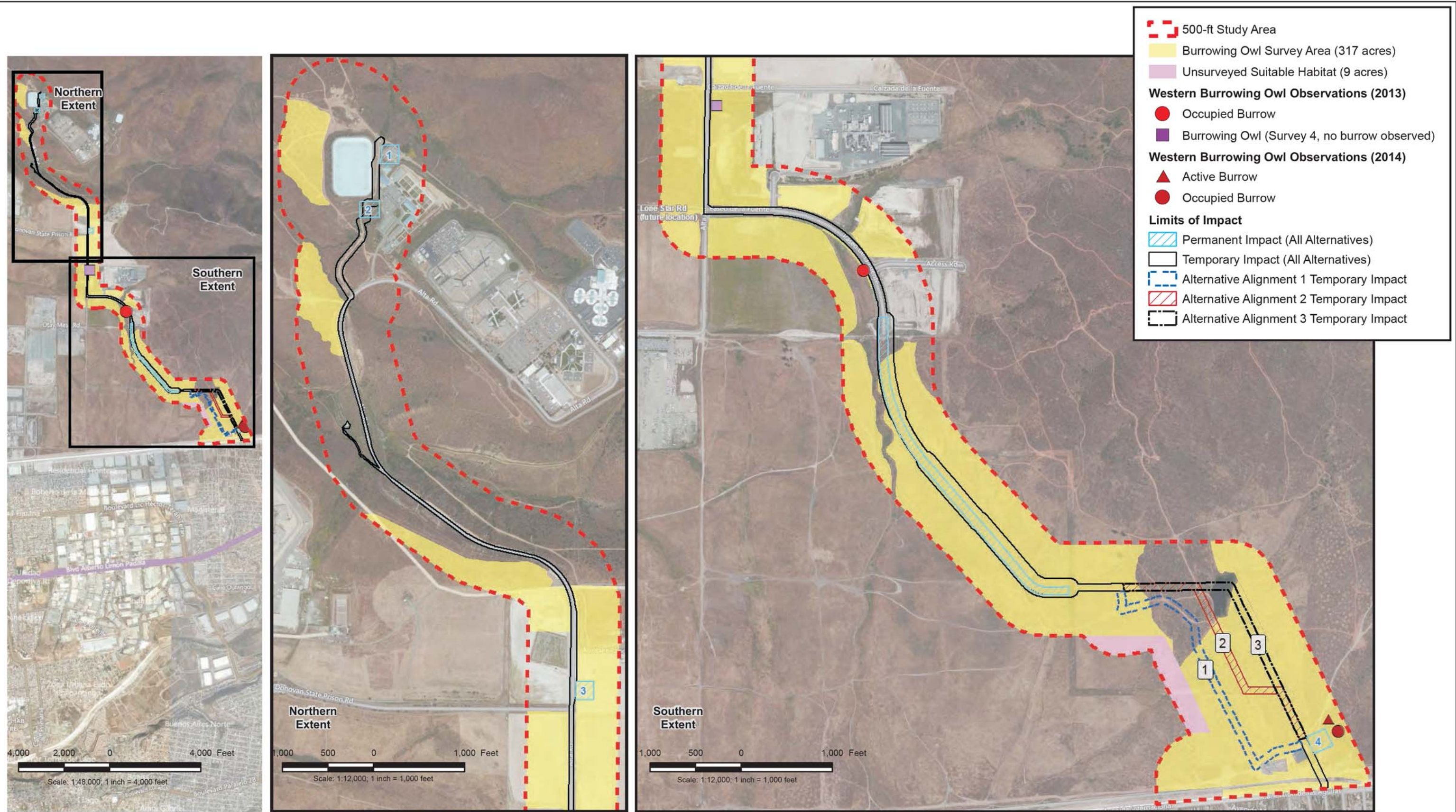


FIGURE 3.2-9
Western Burrowing Owl Results

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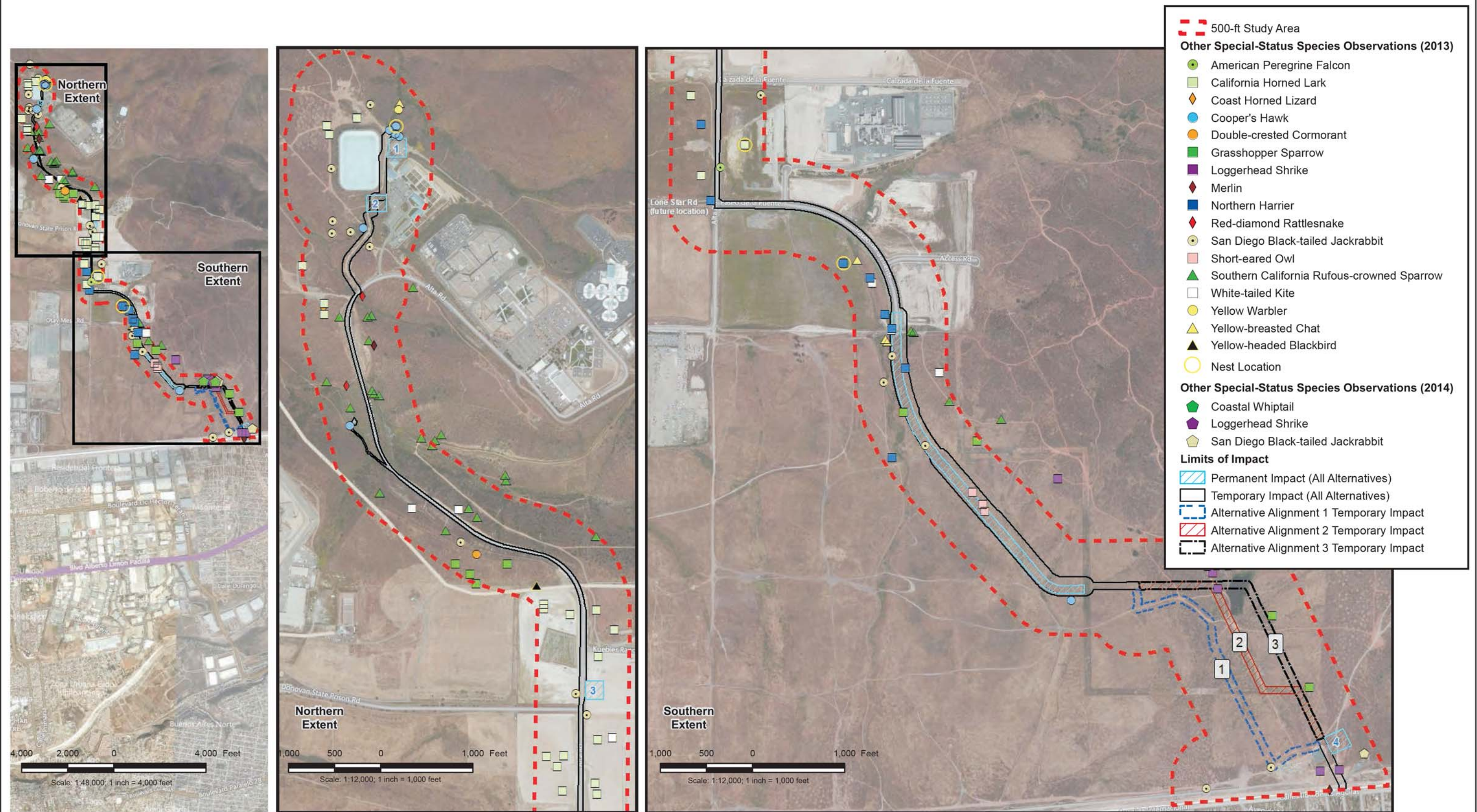


FIGURE 3.2-10
Other Special Status Wildlife Species Results

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isolated by urban development. A viable wildlife migration corridor consists of more than an unobstructed path between habitat areas.

In general, wildlife species are likely to use habitat within the 500-foot study area for local movements related to home range activities (foraging for food or water, defending territories, searching for mates, breeding areas or cover). As indicated by the presence of the species detected during surveys, the 500-foot study area is part of the home range of many species, which may use it at different times of the year depending on available resources.

Regionally, the 500-foot study area represents the western edge of a large, unfragmented area of undeveloped habitat that extends to the east and northeast. The 500-foot study area does not represent a regional migration corridor for terrestrial wildlife as defined above. The large, unfragmented area in the 500-foot study area is designated as a “core biological area” in the San Diego County Multiple Species Conservation Program (MSCP) Subregional Plan. Although the 500-foot study area is intersected by roadways, such as Alta Road, and bordered by development in the northern and central portions, it is primarily contiguous with the “core biological area” within the San Diego National Wildlife Refuge Otay-Sweetwater Unit and the Bureau of Land Management’s Otay Mountain Wilderness. Development south and southwest of the 500-foot study area limits terrestrial wildlife movement in those directions.

The 500-foot study area is part of the Pacific Flyway, a major north/south migration route for birds that travel between North and South America. Otay Lake occurs just north of the northern terminus of the proposed project at Roll Reservoir, and serves as a migrant stopover location, providing food and water to wildlife. Many avian species may pass through the 500-foot study area during migration and/or may use this area as migratory stopover habitat.

3.2.2 Regulatory Setting

3.2.2.1 Federal Regulations and Standards

Federal Endangered Species Act

The federal ESA of 1973 (50 CFR 17) establishes a national policy to protect and recover imperiled species and the ecosystems upon which they depend. Federal ESA Section 7 is the mechanism by which federal agencies ensure the actions they take, including those they fund or authorize, do not jeopardize the existence of any listed species. Under Section 7, federal agencies must consult with USFWS. Formal consultation occurs when a federal agency determines, through biological assessment or other review, that its action is likely to adversely affect a listed species. If it is determined that that an action may adversely affect a species, but not jeopardize its continued existence, USFWS may issue an incidental take statement, as described above in Section 3.2.2.3. Consistent with the ESA, the Department consulted with the USFWS California office and prepared a Biological Assessment (BA). Any mitigation measures listed in the Biological Opinion will be incorporated during the construction, operation, and maintenance of the pipeline and associated facilities by the District.

Migratory Bird Treaty Act

The MBTA (16 U.S.C. 703 *et seq.*) is a federal statute that implements treaties with several countries on the conservation and protection of migratory birds. The number of bird species covered by the MBTA is extensive and is listed at 50 CFR 10.13.

Clean Water Act

Pursuant to Section 404 of the CWA, USACE is authorized to regulate any activity that results in the discharge of dredged or fill material into waters of the U.S. (including wetlands), which include those waters listed in 33 CFR 328.3 (Definitions). USACE, with oversight from the EPA, has the principal authority to issue CWA Section 404 permits.

Executive Order 11990, Protection of Wetlands

Pursuant to EO 11990, each federal agency is responsible for preparing implementing procedures for carrying out the provisions of the EO. The purpose of this EO is to “minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands.”

Executive Order 13112, Invasive Species

EO 13112 requires federal agencies to “prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health effects that invasive species cause.”

3.2.2.2 State Regulations and Standards

California Endangered Species Act

The California ESA of 1984, in combination with the California Native Plant Protection Act (NPPA) adopted in 1977, regulates the listing and take of plant and animal species designated as endangered, threatened, or rare within the state. Under the California ESA, “take” means hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill (CFGF Section 86). The California ESA definition of take does not include “harm” or “harass,” as the federal ESA definition does. As a result, the threshold for take is higher under the California ESA than under the federal ESA.

California Fish and Game Code Sections 1600-1602 – Lake or Streambed Alteration

Pursuant to Section 1600 *et seq.* of the CFGF, CDFW regulates activities that substantially alter the flow, bed, channel, or bank of streams or lakes, unless certain conditions outlined by CDFW are met. The limits of CDFW jurisdiction are defined in CFGF Section 1600 *et seq.* as the “bed, channel, or bank of any river, stream, or lake designated by CDFW in which there is, at any time, an existing fish or wildlife resource or from which these resources derive benefit.” However, in practice, CDFW usually extends its jurisdictional limit and assertion to the top of a bank of a stream, the bank of a lake, or outer edge of the riparian vegetation, whichever is wider.

California Fish and Game Code Sections 3511, 4700, 5050, and 5515 – Fully Protected Species

Prior to the development of the federal and California ESAs, species were listed as “fully protected” by California. Fully protected species, including fish, amphibians, reptiles, birds, and mammals, were identified to allow for the protection of those animals that were rare or that were threatened by potential extinction. The majority of fully protected species have since been listed as threatened or endangered under the California ESA and/or the federal ESA.

California Fish and Game Code Sections 3503 and 3503.5 – Protection of Birds, Nests, and Raptors

Section 3503 of the CFGC states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptors, including their nests or eggs.

California Fish and Game Code Section 3513 – Migratory Birds

This code section protects California's migratory birds by making it unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame birds.

Native Plant Protection Act

NPPA was adopted in 1977 (CFGC Sections 1900–1913) to preserve, protect, and enhance rare and endangered plants. CDFW is responsible for administering the NPPA, while the Fish and Game Commission has the authority to designate native plants as “endangered” or “rare” and provide measures to avoid take.

Porter-Cologne Water Quality Act

Pursuant to Section 13000 *et seq.* of the California Water Code (CWC) (the 1969 Porter-Cologne Water Quality Control Act [Porter-Cologne]), the RWQCB is authorized to regulate any activity that results in discharges of waste or fill material into waters of the state, including “isolated” waters and/or wetlands (e.g., vernal pools and seeps), saline waters, and groundwater within the boundaries of the state (CWC Section 13050[e]). Porter-Cologne is the state equivalent of the CWA.

3.2.2.3 Local Regulations and Standards

San Diego County Multiple Species Conservation Program Subregional Plan

The San Diego County MSCP Subregional Plan was approved in August 1998 (County of San Diego 1998). It is a subregional element of a County-wide conservation plan prepared according to the requirements of state and federal law. The Plan's provisions call for protection of large contiguous areas of habitat to benefit endangered species qualifying the Plan as a habitat conservation plan under Section 10(a) of the federal ESA. The Plan provides the basis for an application for an Incidental Take Authorization for covered species, without the need for a separate federal permit for the 85 species covered by the Plan. The State of California would also grant the County authorization to take covered species (under the California ESA) through the Natural Communities Conservation Program (NCCP) Act.

The project area is within the area covered by the MSCP's South County Subarea Plan. As of 2014, the County and its agency and private conservation partners had assembled 74,347 acres of the proposed 98,379-acre South County MSCP preserve. Large tracts of this preserved land are located immediately east of the project corridor (County of San Diego 2014). The District is not a participant in the San Diego County MSCP Subregional Plan but generally complies with the requirements of the Plan.

3.2.3 Thresholds of Significance

3.2.3.1 CEQA Significance Criteria

According to the CEQA Guidelines, Appendix G, effects to biological resources would be significant if the project would:

- 1) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.
- 2) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or USFWS.
- 3) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- 4) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- 5) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- 6) Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

3.2.3.2 NEPA Considerations

The Department considers project consistency with the federal laws, regulations, and EOs discussed above.

As described in Section 3.1.4, implementation of the District's WRMP, as identified in the WRMP PEIR, includes PDFs and SCPs to reduce potential environmental effects on biological resources from District projects. The following SCP is relevant to the proposed project:

Bio-SCP-1 After completion of final grading for CIP projects located adjacent to native vegetation, the construction documents will require that all graded areas within 100 feet of native vegetation are hydroseeded and/or planted with native plant species similar in composition to the adjacent undisturbed vegetation communities. The District or the construction contractor will retain a qualified biologist to monitor these activities to ensure nonnative or invasive plant species are not used in the hydroseed mix or planting palettes. The hydroseeded/planted areas will be watered via a temporary drip irrigation system or watering truck. Irrigation will cease at some time after successful plant establishment and growth, to be determined by the biologist. No fertilizers or pesticides will be used in the hydroseeded/planted areas. Any irrigation runoff from hydroseeded/planted areas will be directed away from adjacent native vegetation communities, and contained and/or treated within the development footprint of individual projects. All planting stock will be inspected for exotic invertebrate pests (e.g., argentine ants) and any stock found to be infested with such pests will not be allowed to be used in the hydroseeded/planted areas.

3.2.4 Environmental Effects

3.2.4.1 Alternatives 1, 2, and 3

Issue 1: Species Identified as a Candidate, Sensitive, or Special-Status Species

Would Alternatives 1, 2, or 3, or associated facilities result in a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS?

Construction Effects Common to Alternatives 1, 2, and 3

This section analyzes the potential environmental effects, both direct and indirect, from construction-related activities in the area common to Alternatives 1, 2, and 3. This area includes the common pipeline segment and associated facilities shared by all three alignments and comprises roughly the northern two-thirds of the proposed project area, starting approximately 550 LF east of where the alignment crosses an existing SDG&E 24-inch gas pipeline. This area also includes the metering station, potential pump station, potential disinfection facility, outfall structure, and the proposed conveyance pipeline beginning at the United States-Mexico border connection point and continuing northwesterly for approximately 500 feet. The disinfection facility is proposed at one of four potential locations. To be conservative, all four potential locations are included in this analysis.

The majority of construction effects within the area common to Alternatives 1, 2, and 3 are temporary. The “temporary impact area” is generally associated with the pipeline corridor (Figure 3.2-11), assuming it would be restored to pre-project conditions upon completion of construction. Permanent effects would occur at the locations of the metering station, potential pump station, potential disinfection facility, outfall structure, and future Lone Star Road improvements, defined herein as the “permanent impact area.”

Federal and State Listed Plant Species

The majority of direct effects from construction within the area common to Alternatives 1, 2, and 3 would occur in existing paved and/or dirt roads. Most effects to plant species would occur within the section of the proposed alignment corresponding with the future Lone Star Road improvements.

Direct Effects

The only federal or state-listed plant species with the potential to be directly affected by the proposed project is Otay tarplant. Within the area common to Alternatives 1, 2, and 3, the Otay tarplant individuals detected during surveys would not be directly affected by construction activities. However, construction-related activities within the area common to Alternatives 1, 2, and 3 would result in direct, permanent and temporary effects to Otay tarplant critical habitat, as shown in Table 3.2-6 and Figure 3.2-4. Permanent and temporary removal of Otay tarplant critical habitat would result from grading, trenching, and installation of the pipeline and additional project infrastructure. Potential construction-related direct effects to Otay tarplant critical habitat would be significant.

Table 3.2-6 Permanent and Temporary Direct Effects to Critical Habitat Areas Common to Alternatives 1, 2, and 3 (Acres)

Impact Type ⁽¹⁾	Pipeline Alignment Common to Alts 1, 2, & 3	Potential Disinfection Facility Site 1	Potential Disinfection Facility Site 2	Potential Disinfection Facility Site 3	Potential Disinfection Facility Site 4, Metering Station, and Potential Pump Station	Outfall Structure	Total ⁽²⁾
<i>Otay tarplant</i>							
Permanent	3.88	-	-	-	-	-	3.88
Temporary	6.08	-	-	-	-	-	6.08
<i>San Diego fairy shrimp</i>							
Permanent	1.05	-	-	-	0.16	-	1.21
Temporary	2.64	-	-	-	-	-	2.64
<i>Quino checkerspot butterfly</i>							
Permanent		0.03	-	-	1.05	-	1.09
Temporary	1.01	-	-	-	-	-	1.01
<i>Coastal California gnatcatcher</i>							
Permanent	-	-	-	-	-	-	-
Temporary	0.73	-	-	-	-	-	0.73

⁽¹⁾ Critical habitat for species not listed is not directly affected by the proposed project.

⁽²⁾ Values may not sum due to rounding.

Source: AECOM 2015

Indirect Effects

Construction activities have the potential to introduce nonnative plants by carrying seeds from outside sources on vehicles, people, and equipment. Ground disturbance could promote the establishment and spread of opportunistic nonnative plants. Additionally, wildfires caused by construction are rare but may occur, and nonnative plant species often frequent recently burned areas. The potential spread of nonnative species into the surrounding habitat, including critical habitat for Otay tarplant, would be a permanent indirect impact.

Grading, vegetation clearing, and other construction activities have the potential to increase sedimentation and erosion. Airborne dust may result from construction vehicle travel on dirt access roads, grading, trenching, and other ground-disturbing activities. Construction effects from dust, sedimentation, erosion, and unauthorized access have the potential to impact Otay tarplant individuals in adjacent areas and degrade the quality of adjacent habitat, including critical habitat, for Otay tarplant. Potential construction-related temporary indirect effects to Otay tarplant would be significant.

Nonlisted Special-Status Plant Species

Direct Effects

Four of the 12 nonlisted special-status plant species detected during rare plant surveys were within the permanent or temporary direct impact area for Alternatives 1, 2, and 3. Construction-related activities would result in permanent and temporary effects to San Diego sunflower (*Viguiera laciniata*), San Diego marsh-elder (*Iva hayesiana*), small-flowered microseris (*Microseris douglasii*), and Munz's sage (*Salvia munzii*), as shown in Table 3.2-7 and Figure 3.2-4. Permanent and temporary removal of these nonlisted special-status plant species would result from grading, trenching, and installation of the proposed

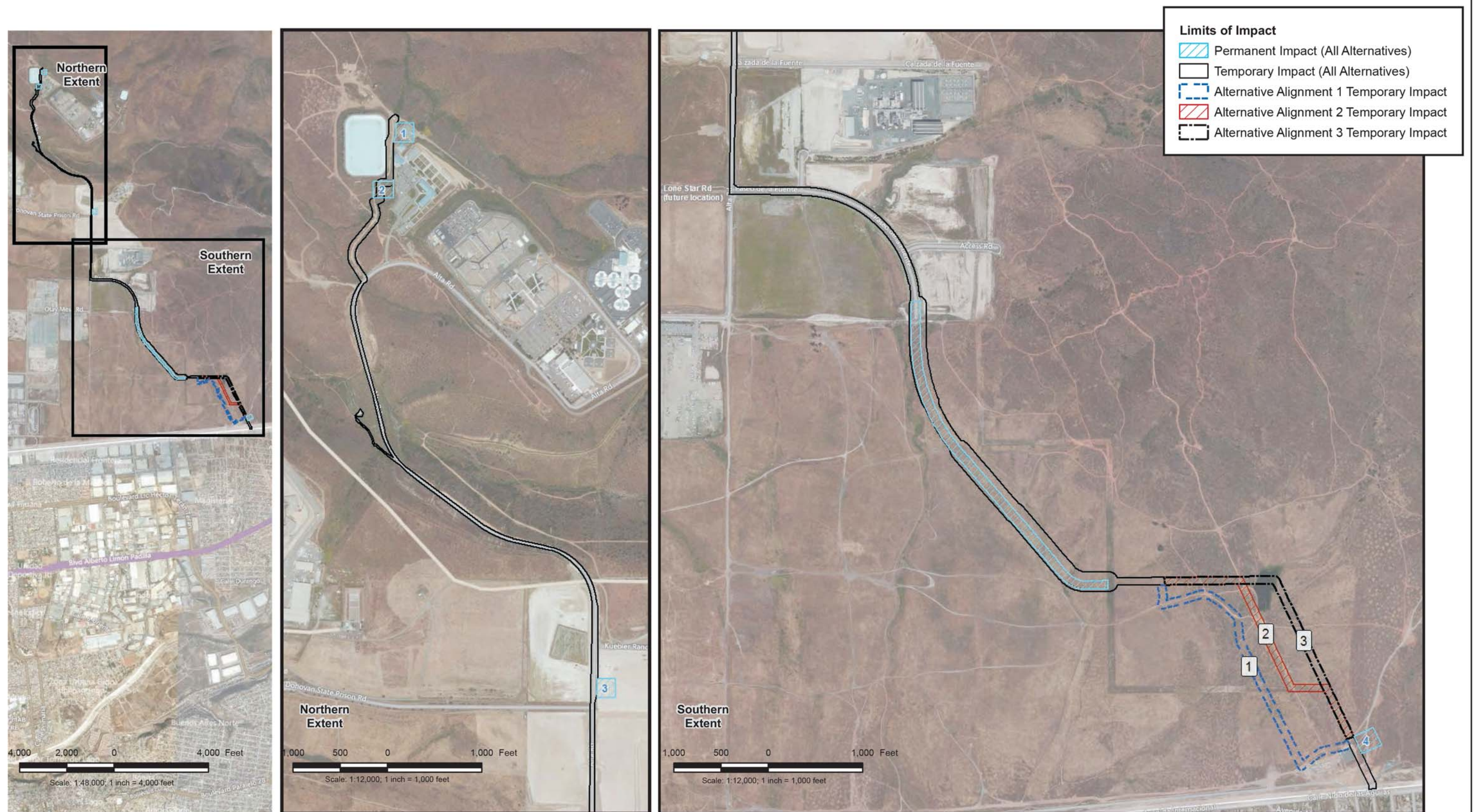


FIGURE 3.2-11
Proposed Project Impact Area



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pipeline and associated facilities. Potential construction-related direct effects to nonlisted special-status plant species would be significant.

Table 3.2-7 Permanent and Temporary Direct Effects to Nonlisted Special-status Plant Species – Areas Common to Alternatives 1, 2, and 3⁽¹⁾

Impact Type ⁽²⁾	Pipeline Alignment Common to Alts 1, 2, & 3	Potential Disinfection Facility Site 1	Potential Disinfection Facility Site 2	Potential Disinfection Facility Site 3	Potential Disinfection Facility Site 4, Metering Station, and Potential Pump Station	Outfall Structure	Total ⁽³⁾
<i>San Diego sunflower</i>							
Permanent	15	-	-	-	-	-	15
Temporary	70	-	-	-	-	-	70
<i>San Diego marsh-elder</i>							
Permanent	15	-	-	-	-	-	15
Temporary	-	-	-	-	-	-	-
<i>Small-flowered microseris</i>							
Permanent	-	-	-	-	215	-	215
Temporary	100,070	-	-	-	-	-	100,070
<i>Munz's sage</i>							
Permanent	-	-	-	-	-	-	-
Temporary	5	-	-	-	-	-	5

⁽¹⁾ Numbers represent estimated number of individual plants affected.

⁽²⁾ Species not listed are not directly affected by the proposed project.

⁽³⁾ Values may not sum due to rounding.

Source: AECOM 2015

Indirect Effects

As discussed above for federal and state listed plant species, construction effects from dust, sedimentation, erosion, and unauthorized access have the potential to impact nonlisted special-status plant species in adjacent areas and degrade the quality of adjacent habitat for nonlisted special-status plant species. Potential construction-related temporary indirect effects to nonlisted special-status plant species would be significant.

Federal and State Listed Wildlife Species

Direct Effects

San Diego Fairy Shrimp. No San Diego fairy shrimp were detected during surveys. No direct effects would occur to road pools or vernal pools. Construction-related activities within the area common to Alternatives 1, 2, and 3 would result in permanent and temporary effects to San Diego fairy shrimp critical habitat in the southeast portion of the area common to Alternatives 1, 2, and 3, as shown in Table 3.2-6 and Figure 3.2-5. Permanent and temporary removal of San Diego fairy shrimp critical habitat would result from grading, trenching, and installation of the pipeline and additional project infrastructure.

Riverside Fairy Shrimp. Riverside fairy shrimp were detected in the 250-foot study area, but outside the proposed project's direct impact area. No critical habitat is present within the area common to

Alternatives 1, 2, and 3. No direct effects would occur to road pools or vernal pools or Riverside fairy shrimp critical habitat.

Quino Checkerspot Butterfly. Quino checkerspot butterfly suitable habitat occurs throughout the proposed project. Quino checkerspot butterfly critical habitat occurs in the northern and southern ends of the area common to Alternatives 1, 2, and 3. Construction-related activities within the area common to Alternatives 1, 2, and 3 would result in permanent and temporary effects to Quino checkerspot butterfly suitable habitat and critical habitat, as shown in Table 3.2-6 and Table 3.2-8, and Figure 3.2-6. Permanent and temporary removal of habitat would result from grading, trenching, and installation of the proposed pipeline and associated facilities. Construction may also result in effects to individuals from vehicular strikes or excavation equipment.

Table 3.2-8 Permanent and Temporary Direct Effects to Federally Listed and State-Listed Wildlife Species Suitable Habitat – Areas Common to Alternatives 1, 2, and 3⁽¹⁾

Impact Type	Pipeline Alignment Common to Alts 1, 2, & 3	Potential Disinfection Facility Site 1	Potential Disinfection Facility Site 2 ⁽²⁾	Potential Disinfection Facility Site 3	Potential Disinfection Facility Site 4, Metering Station, and Potential Pump Station	Outfall Structure	Total ⁽³⁾
<i>Quino checkerspot butterfly</i>							
Permanent	8.16	0.33	0.89	0.92	1.05	-	11.36
Temporary	15.43	-	-	-	-	0.12	15.55
<i>Coastal California gnatcatcher</i>							
Permanent	0.48	0.16	-	-	-	-	0.64
Temporary	1.02	-	-	-	-	0.26	1.28
<i>Least Bell's vireo</i>							
Permanent	-	-	0.58	-	-	-	0.58
Temporary	0.64	-	-	-	-	0.09	0.73

⁽¹⁾ Numbers represent acres of suitable habitat.

⁽²⁾ Potential Disinfection Facility Site 2 straddles the pipeline alignment resulting in overlap that defaults to permanent impact for the facility. In the scenario where that facility is not used, there would be temporary effects for that area instead of permanent.

⁽³⁾ Values may not sum due to rounding.

Source: AECOM 2015

Coastal California Gnatcatcher. Coastal California gnatcatcher suitable habitat occurs in the northern half of the area common to Alternatives 1, 2, and 3. Coastal California gnatcatcher critical habitat occurs in the north-central portion of the area common to Alternatives 1, 2, and 3. Construction-related activities would result in permanent and temporary effects to coastal California gnatcatcher suitable habitat and critical habitat, as shown in Table 3.2-6 and Table 3.2-8, and Figure 3.2-7. Permanent and temporary removal of habitat would result from grading, trenching, and installation of the proposed pipeline and associated facilities. Construction may also impact individuals from vehicular strikes or excavation equipment. Coastal California gnatcatchers were detected in the northern portion of the proposed project near O'Neal Canyon and north of Roll Reservoir. Collisions are expected to be minimal since none of the areas where coastal California gnatcatcher were observed during surveys are within the temporary or permanent impact area in the area common to Alternatives 1, 2, and 3. Vehicular collisions occur most frequently during the vegetation clearing stage of construction, and involve eggs, nestlings, and recently fledged young that cannot safely avoid equipment.

Least Bell's Vireo. Least Bell's vireo suitable habitat occurs in the northern end of the area common to Alternatives 1, 2, and 3. Construction-related activities within the area common to Alternatives 1, 2, and 3 would result in permanent and temporary effects to least Bell's vireo suitable habitat, as shown in Table 3.2-8 and Figure 3.2-8. Permanent and temporary removal of habitat would result from grading, trenching, and installation of the proposed pipeline and associated facilities. Construction may also impact individuals from vehicular strikes or excavation equipment. Vehicular collisions occur most frequently during the vegetation clearing stage of construction, and involve eggs, nestlings, and recently fledged young that cannot safely avoid equipment. Three of the four areas in which least Bell's vireo were observed during surveys are outside the temporary and permanent impact area common to Alternatives 1, 2, and 3. Habitat where least Bell's vireos were identified near Roll Reservoir would be temporarily affected during construction and potentially permanently affected if the disinfection facility is constructed at Roll Reservoir.

Potential construction-related direct effects to Riverside fairy shrimp, San Diego fairy shrimp, Quino checkerspot butterfly, coastal California gnatcatcher, and least Bell's vireo would be significant.

Indirect Effects

The potential spread of nonnative species into the surrounding habitat for Riverside fairy shrimp, San Diego fairy shrimp, Quino checkerspot butterfly, coastal California gnatcatcher, and least Bell's vireo habitat, including critical habitat where applicable, would be a permanent indirect impact.

Grading and other construction activities associated with construction have the potential to create airborne dust, sedimentation, and erosion. Avian species may also be affected by increased noise levels during construction. These indirect effects have the potential to degrade the habitat of Riverside fairy shrimp, San Diego fairy shrimp, Quino checkerspot butterfly, coastal California gnatcatcher, and least Bell's vireo, and to alter species behavior. These effects would result in a temporary indirect impact.

Riverside fairy shrimp and San Diego fairy shrimp may also be indirectly affected by changes in the natural micro-topography as a result of construction that alters the natural hydrological regime, and may result in increased runoff, erosion, and sedimentation, and contamination of vernal pools. The hydrology of vernal pools is supported by both surface flows within a pool's topographic watershed (e.g., the surface area in which water drains into a vernal pool) and subsurface flows that may extend beyond the surface watershed. Surface and subsurface lateral flows between vernal pools and the surrounding uplands influence the onset and level of inundation, and the seasonal drying of pools. Modifications to the hydrology of vernal pools could also alter the distribution of other vernal pool flora and fauna that are influenced by the length and frequency of water inundation. Altering the timing and duration of ponding could negatively impact the ability of Riverside fairy shrimp or San Diego fairy shrimp to grow and reproduce, since their phenology (temporally determined life cycle events) is dependent on such factors. These would be a temporary indirect impact.

Potential construction-related indirect effects to Riverside fairy shrimp, San Diego fairy shrimp, Quino checkerspot butterfly, coastal California gnatcatcher, and least Bell's vireo would be significant.

Nonlisted Special-Status Wildlife Species

Direct Effects

Reptiles. Construction-related activities within the area common to Alternatives 1, 2, and 3 would directly impact nonlisted special-status reptile species by the permanent and temporary removal of upland habitat, such as Diegan coastal sage scrub and nonnative grassland, as shown in Table 3.2-9 and

Table 3.2-10, and Figure 3.2-2. Species detected that would be affected by removal of upland habitat include red-diamond rattlesnake (*Crotalus ruber*) and Blainville's horned lizard (*Phrynosoma blainvillii*). Permanent and temporary removal of habitat would result from grading, trenching, and installation of the proposed pipeline and associated facilities. Construction may also result in effects to individuals from vehicular strikes or excavation equipment.

Avian Species. Construction-related activities within the area common to Alternatives 1, 2, and 3 would result in permanent and temporary effects to western burrowing owl suitable habitat, as shown in Table 3.2-11 and Figure 3.2-9. Permanent and temporary removal of habitat would result from grading, trenching, and installation of the proposed pipeline and associated facilities. Construction may also result in effects to individuals from vehicular strikes or excavation equipment. Vehicular collisions occur most frequently during the vegetation clearing stage of construction, and involve eggs, nestlings, and recently fledged young that cannot safely avoid equipment. Occupied and active western burrowing owl burrows would not be directly affected by construction activities because they are not within the disturbance area, as shown in Table 3.2-11 and Figure 3.2-9.

Construction-related activities within the area common to Alternatives 1, 2, and 3 would directly impact other nonlisted special-status avian species by the permanent and temporary removal of riparian and wetland habitat (such as alkali seep, southern willow scrub, and tamarisk scrub) and upland habitat (such as Diegan coastal sage scrub and nonnative grassland), as shown in Table 3.2-9 and Table 3.2-10, and Figure 3.2-2. Species detected that would be affected by removal of riparian and wetland habitat include yellow-breasted chat and yellow warbler. Species detected that would be affected by removal of upland habitat include southern California rufous-crowned sparrow, grasshopper sparrow, northern harrier, California horned lark, and loggerhead shrike. Species detected that would be affected by removal of both riparian and wetland habitat and upland habitat include Cooper's hawk and white-tailed kite. A variety of other avian species protected under the MBTA, but not rare, threatened, or endangered by local, state, or federal laws or regulations, would also be affected by removal of these vegetation communities.

Mammal Species. Construction-related activities within the area common to Alternatives 1, 2, and 3 would directly impact San Diego black-tailed jackrabbit by the permanent and temporary removal of upland habitat (such as Diegan coastal sage scrub and nonnative grassland), as shown in Table 3.2-9 and Table 3.2-10, and Figure 3.2-2. Permanent and temporary removal of habitat would result from grading, trenching, and installation of the proposed pipeline and associated facilities. Construction may also result in effects to individuals from vehicular strikes or excavation equipment.

Potential construction-related direct effects to nonlisted special-status wildlife species would be significant.

Table 3.2-9 Permanent Direct Effects to Vegetation Communities and Other Cover Types – Area Common to Alternatives 1, 2, and 3⁽¹⁾

Vegetation Communities and Other Cover Types	Pipeline Alignment Common to Alts 1, 2, & 3	Potential Disinfection Facility Site 1	Potential Disinfection Facility Site 2 ⁽²⁾	Potential Disinfection Facility Site 3	Potential Disinfection Facility Site 4, Metering Station, and Potential Pump Station	Outfall Structure	Total ⁽³⁾
<i>Riparian and Wetland</i>							
Alkali Seep	0.16	-	-	-	-	-	0.16
Freshwater Marsh	-	-	-	-	-	-	-
Freshwater Seep	-	-	-	-	-	-	-
Mulefat Scrub	-	-	-	-	-	-	-
Road Pools	-	-	-	-	-	-	-
Southern Arroyo Willow Riparian Forest	-	-	-	-	-	-	-
Southern Willow Scrub	-	-	-	-	-	-	-
Tamarisk Scrub	<0.01	-	0.14	-	-	-	0.15
Vernal Pools	-	-	-	-	-	-	-
Total Riparian and Wetland	0.16	-	0.14	-	-	-	0.30
<i>Upland</i>							
Diegan Coastal Sage Scrub	0.47	0.22	0.37	-	0.01	-	1.07
Native Grassland	-	-	-	-	-	-	-
Nonnative Grassland	7.17	-	0.09	-	0.94	-	8.20
Southern Mixed Chaparral	-	-	-	-	-	-	-
Total Upland	7.65	0.22	0.46	-	0.95	-	9.27
<i>Other Cover Types</i>							
Disturbed Habitat	0.35	0.12	0.29	0.92	0.10	-	1.79
Eucalyptus Woodland	-	-	-	-	-	-	-
Urban/Developed	0.51	0.56	-	-	-	-	1.07
Total Other Cover Types	0.86	0.68	0.29	0.92	0.10	-	2.85
Total ⁽²⁾	8.67	0.89	0.89	0.92	1.05	-	12.43

⁽¹⁾ Numbers represent acres of suitable habitat.

⁽²⁾ Potential Disinfection Facility Site 2 straddles the pipeline alignment resulting in overlap that defaults to permanent impact for the facility. In the scenario where that facility is not used, there would be temporary effects for that area instead of permanent.

⁽³⁾ Values may not sum due to rounding.

Source: AECOM 2015

Table 3.2-10 Temporary Direct Effects to Vegetation Communities and Other Cover Types – Area Common to Alternatives 1, 2, and 3 (Acres)

Vegetation Communities and Other Cover Types	Pipeline Alignment Common to Alts 1, 2, & 3	Potential Disinfection Facility Sites 1, 2, 3 & 4, Metering Station and Potential Pump Station	Outfall Structure	Total ⁽¹⁾
Alkali Seep	0.23	-	-	0.23
Freshwater Marsh	-	-	-	-
Freshwater Seep	<0.01	-	-	<0.01
Mulefat Scrub	-	-	-	-
Road Pools	<0.01	-	-	<0.01
Southern Arroyo Willow Riparian Forest	-	-	-	-
Southern Willow Scrub	0.03	-	-	0.03
Tamarisk Scrub	0.12	-	-	0.12
Vernal Pools	-	-	-	-
Total Riparian and Wetland	0.38	-	-	0.38
Diegan Coastal Sage Scrub	2.06	-	0.11	2.17
Native Grassland	0.00	-	-	-
Nonnative Grassland	9.34	-	-	9.34
Southern Mixed Chaparral	-	-	-	-
Total Upland	11.41	-	0.11	11.52
Disturbed Habitat	3.64	-	-	3.64
Eucalyptus Woodland	-	-	-	-
Urban/Developed	12.98	-	0.25	13.23
Total Other Cover Types	16.63	-	0.25	16.88
Total ⁽¹⁾	28.42	-	0.37	28.78

⁽¹⁾ Values may not sum due to rounding.

Source: AECOM 2015

Table 3.2-11 Permanent and Temporary Direct Effects to Western Burrowing Owl – Areas Common to Alternatives 1, 2, and 3 (Acres)

Impact Type	Pipeline Alignment Common to Alts 1, 2, & 3	Potential Disinfection Facility Site 1	Potential Disinfection Facility Site 2	Potential Disinfection Facility Site 3	Potential Disinfection Facility Site 4, Metering Station, and Potential Pump Station	Outfall Structure	Total ⁽²⁾
<i>Suitable Habitat⁽¹⁾</i>							
Permanent	7.59	-	-	0.90	1.05	-	9.55
Temporary	10.77	-	-	-	-	-	10.77

⁽¹⁾ Numbers represent acres of suitable habitat.

⁽²⁾ Values may not sum due to rounding.

Source: AECOM 2015

Indirect Effects

Construction activities have the potential to introduce nonnative plants by carrying seeds from outside sources on vehicles, people, and equipment. Ground disturbance could promote the establishment and spread of opportunistic nonnative plants. Additionally, wildfires caused by construction are rare but may occur, and nonnative plant species often frequent recently burned areas. The potential spread of nonnative species into the surrounding habitat for nonlisted special-status wildlife species would be a permanent indirect impact.

Grading and other construction activities have the potential to create airborne dust, sedimentation, and erosion. Avian species may also be affected by increased noise levels during construction. These temporary indirect effects have the potential to degrade nonlisted special-status wildlife species habitat and alter species behavior.

Potential construction-related indirect effects to nonlisted special-status wildlife species would be significant.

Construction Effects to Alternatives 1, 2, and 3

The areas unique to each of Alternatives 1, 2, and 3 represents the proposed pipeline alignment in the southern portion of the proposed project area (Figure 3.2-11) where the alignments are separate. All direct effects from construction within the Alternatives 1, 2, and 3 pipeline alignment unique areas would be temporary. There would not be any permanent direct effects.

Federal and State Listed Plant Species

The only federal or state listed plant species with the potential to be directly affected by the proposed project is Otay tarplant. Otay tarplant was not observed within the Alternatives 1, 2, and 3 unique areas or immediate vicinity of this area. No critical habitat for Otay tarplant is located within the Alternatives 1, 2, or 3 unique areas. Therefore, construction is not expected to result in direct or indirect effects to Otay tarplant or critical habitat in the Alternatives 1, 2, and 3 unique areas.

Nonlisted Special-Status Plant Species

Direct and indirect effects to the 12 nonlisted special-status plant species detected during botanical surveys are discussed as a group because effects would be similar between plant species.

Direct Effects

None of the 12 nonlisted special-status plant species detected during rare plant surveys are known to occur within the Alternative 1 unique area, as shown in Table 3.2-12. Therefore, no direct effects to nonlisted special-status plant species are anticipated to occur to the Alternative 1 unique area during construction.

Two of the 12 nonlisted special-status plant species detected during rare plant surveys are within the direct impact area of the Alternative 2 unique area. Construction-related activities within the Alternative 2 unique area would result in direct effects to coast barrel cactus and small-flowered microseris, as shown in Table 3.2-12 and Figure 3.2-4. Permanent and temporary removal of these nonlisted special-status plant species would result from grading, trenching, and installation of the pipeline. Direct effects to nonlisted special-status plant species would be significant.

One of the 12 nonlisted special-status plant species detected during rare plant surveys is within the direct impact area of the Alternative 3 unique area. Construction-related activities within the Alternative

3 unique area would result in direct effects to coast barrel cactus, as shown in Table 3.2-12 and Figure 3.2-4. Permanent and temporary removal of these nonlisted special-status plant species would result from grading, trenching, and installation of the pipeline. Potential construction-related direct effects to coast barrel cactus would be significant.

Table 3.2-12 Permanent and Temporary Direct Effects to Nonlisted Special-status Plant Species for Alternatives 1, 2, and 3⁽¹⁾

Impact Type ⁽²⁾	Area Unique to Alternative 1	Area Unique to Alternative 2	Area Unique to Alternative 3
<i>San Diego sunflower</i>			
Permanent	-	-	-
Temporary	-	-	-
<i>Coast barrel cactus</i>			
Permanent	-	-	-
Temporary	-	19	19
<i>San Diego marsh-elder</i>			
Permanent	-	-	-
Temporary	-	-	-
<i>Small-flowered microseris</i>			
Permanent	-	-	-
Temporary	-	100	-
<i>Munz's sage</i>			
Permanent	-	-	-
Temporary	-	-	-

⁽¹⁾ Numbers represent estimated number of individual plants affected.

⁽²⁾ Species not listed are not directly affected by the proposed project.

Source: AECOM 2015

Indirect Effects

The types of indirect effects that would occur within the areas unique to each of Alternatives 1, 2, and 3 are identical to those described for nonlisted special-status plant species for the area common to Alternatives 1, 2, and 3. Indirect effects would be limited to those nonlisted special-status plant species in proximity to the Alternative 1 unique area, including coast barrel cactus, San Diego sunflower, San Diego County needlegrass, San Diego goldenstar, and Palmer's grappling hook. Potential construction-related indirect effects to nonlisted special-status plant species would be significant.

Federal and State Listed Wildlife Species

Direct Effects

San Diego Fairy Shrimp. No San Diego fairy shrimp were detected during protocol surveys. One unoccupied road pool would be temporarily affected within the Alternative 1 unique area, as shown in Table 3.2-13 and Figure 3.2-5. Construction-related activities within the Alternatives 1, 2, and 3 unique areas would result in temporary effects to San Diego fairy shrimp critical habitat, as shown in Table 3.2-13 and Figure 3.2-5. Temporary removal of San Diego fairy shrimp critical habitat would result from grading, trenching, and installation of the proposed pipeline.

Table 3.2-13 Permanent and Temporary Direct Effects to Critical Habitat for Alternatives 1, 2, and 3

Impact Type ^(1,2)	Area Unique to Alternative 1	Area Unique to Alternative 2	Area Unique to Alternative 3
<i>Riverside fairy shrimp</i>			
Permanent	-	-	-
Temporary	0.35	1.11	1.75
<i>San Diego fairy shrimp</i>			
Permanent	-	-	-
Temporary	4.6	4.41	4.41
<i>Quino checkerspot butterfly</i>			
Permanent	-	-	-
Temporary	5.61	5.5	5.51

⁽¹⁾ Critical habitat for species not listed is not directly affected by the proposed project.
⁽²⁾ Numbers represent acres of critical habitat.
Source: AECOM 2015

Riverside Fairy Shrimp. Riverside fairy shrimp was detected in the 250-foot study area, but outside the proposed project's direct impact area. One unoccupied road pool would be temporarily affected within the Alternative 1 unique area, as shown in Table 3.2-13 and Figure 3.2-5. Construction-related activities within the Alternatives 1, 2, and 3 unique areas would result in temporary effects to Riverside fairy shrimp critical habitat (Table 3.2-13 and Figure 3.2-5). Temporary effects would result from grading, trenching, and installation of the pipeline.

Quino Checkerspot Butterfly. Construction-related activities within the Alternatives 1, 2, and 3 unique areas would result in temporary effects to Quino checkerspot butterfly suitable habitat and critical habitat, as shown in Table 3.2-13 and Table 3.2-14, and Figure 3.2-6. Temporary removal of habitat would result from grading, trenching, and installation of the proposed pipeline. Construction may also result in effects to individuals from vehicular strikes or excavation equipment. Collisions are expected to be minimal since all Quino checkerspot butterfly observations during the protocol surveys were outside of the proposed impact area.

Table 3.2-14 Permanent and Temporary Direct Effects to Federally Listed and State-Listed Wildlife Species Suitable Habitat for Alternatives 1, 2, and 3

Impact Type ⁽¹⁾	Area Unique to Alternative 1	Area Unique to Alternative 2	Area Unique to Alternative 3
<i>Quino checkerspot butterfly</i>			
Permanent	-	-	-
Temporary	6.24	5.55	5.56
<i>Coastal California Gnatcatcher</i>			
Permanent	-	-	-
Temporary	1.05	1.73	1.41

⁽¹⁾ Numbers represent acres of suitable habitat.
Source: AECOM 2015

Coastal California Gnatcatcher. Construction-related activities within the Alternatives 1, 2, and 3 unique areas would result in temporary effects to coastal California gnatcatcher suitable habitat, as shown in Table 3.2-14 and Figure 3.2-7. Temporary removal of habitat would result from grading, trenching, and installation of the proposed pipeline. Construction may also result in effects to individuals from vehicular strikes or excavation equipment. Collisions are expected to be minimal since all of the coastal California gnatcatcher and/or territories were detected at the northern end of the proposed project near O’Neal Canyon and Roll Reservoir outside of the impact area. Vehicular collisions occur most frequently during the vegetation clearing stage of construction, and involve eggs, nestlings, and recently fledged young that cannot safely avoid equipment.

Least Bell’s Vireo. No least Bell’s vireo suitable habitat occurs within the Alternatives 1, 2, and 3 unique areas. Therefore, no direct effects to least Bell’s vireo would occur.

Construction-related direct effects within the Alternatives 1, 2, and 3 unique areas to Riverside fairy shrimp, San Diego fairy shrimp, Quino checkerspot butterfly, and coastal California gnatcatcher would be potentially significant.

Indirect Effects

The types of indirect effects occurring in areas unique to each of Alternatives 1, 2, and 3 are identical to those described for federally listed and state-listed wildlife species for the area common to Alternatives 1, 2, and 3. Indirect effects would be limited to those federally listed and state-listed wildlife species in proximity to the Alternatives 1, 2, and 3 unique areas, including Riverside fairy shrimp, San Diego fairy shrimp, Quino checkerspot butterfly, and coastal California gnatcatcher. Potential construction-related indirect effects to Riverside fairy shrimp, San Diego fairy shrimp, Quino checkerspot butterfly, and coastal California gnatcatcher would be significant.

Nonlisted Special-Status Wildlife Species

Direct Effects

Reptiles. Construction-related activities within the Alternatives 1, 2, and 3 unique areas would directly impact nonlisted special-status reptile species through the temporary removal of upland habitat, such as Diegan coastal sage scrub, native grassland, and nonnative grassland, as shown in Table 3.2-15 and Figure 3.2-2. Species detected that would be affected by removal of upland habitat include red-diamond rattlesnake and Blainville’s horned lizard. Temporary removal of habitat would result from grading, trenching, and installation of the pipeline. There would be no permanent direct effects to nonlisted special-status reptile species within the Alternatives 1, 2, and 3 unique areas.

Avian Species. Construction-related activities within the Alternatives 1, 2, and 3 unique areas would result in temporary effects to western burrowing owl suitable habitat, as shown in Table 3.2-16 and Figure 3.2-9. Temporary removal of habitat would result from grading, trenching, and installation of the proposed pipeline. Construction may also result in effects to individuals from vehicular strikes or excavation equipment. Vehicular collisions occur most frequently during the vegetation clearing stage of construction, and involve eggs, nestlings, and recently fledged young that cannot safely avoid equipment. However, collisions are expected to be minimal since all of the western burrowing owl observations during protocol surveys were outside the proposed impact area. Occupied and active western burrowing owl burrows would not be directly affected by construction activities.

Table 3.2-15 Temporary Direct Effects to Vegetation Communities and Other Cover Types for Alternatives 1, 2, and 3

Impact Type	Area Unique to Alternative 1	Area Unique to Alternative 2	Area Unique to Alternative 3
<i>Riparian and Wetland</i>			
Alkali Seep	-	-	-
Freshwater Marsh	-	-	-
Freshwater Seep	-	-	0.45
Mulefat Scrub	-	-	-
Road Pools	0.01	-	-
Southern Arroyo Willow Riparian Forest	-	-	-
Southern Willow Scrub	-	-	-
Tamarisk Scrub	-	-	-
Vernal Pools	-	-	-
Subtotal Riparian and Wetland	0.01	-	0.45
<i>Upland</i>			
Diegan Coastal Sage Scrub	1.55	1.63	2.03
Native Grassland	1.03	1.61	1.61
Nonnative Grassland	2.58	1.35	1.34
Southern Mixed Chaparral	-	-	-
Total Upland	5.15	4.60	4.98
<i>Other Cover Types</i>			
Disturbed Habitat	1.08	0.96	0.13
Eucalyptus Woodland	-	-	-
Urban/Developed	0.00	-	-
Subtotal Other Cover Types	1.08	0.96	0.13
Total ⁽¹⁾	6.24	5.55	5.56

⁽¹⁾ Values may not sum due to rounding.

Source: AECOM 2015

Table 3.2-16 Permanent and Temporary Direct Effects to Western Burrowing Owl Alternatives 1, 2, and 3

Impact Type	Area Unique to Alternative 1	Area Unique to Alternative 2	Area Unique to Alternative 3
<i>Suitable Habitat⁽¹⁾</i>			
Permanent	-	-	-
Temporary	4.64	3.57	3.63

⁽¹⁾ Numbers represent acres of suitable habitat.

Source: AECOM 2015

Construction-related activities within the Alternatives 1, 2, and 3 unique areas would directly impact other nonlisted special-status avian species through the temporary removal of riparian and wetland habitat (such as road pools and tamarisk scrub) and upland habitat (such as Diegan coastal sage scrub, native grassland, and nonnative grassland), as shown in Table 3.2-9 and Table 3.2-15, and Figure 3.2-2.

Yellow-breasted chat and yellow warbler would not be affected by removal of riparian and wetland habitat within the Alternatives 1, 2, and 3 unique areas because the small fragmented riparian habitat in this area is not large enough to be suitable for these species. Species detected that would be affected by removal of upland habitat include southern California rufous-crowned sparrow, grasshopper sparrow, northern harrier, California horned lark, and loggerhead shrike. Species detected that would be affected by removal of both riparian and wetland habitat and upland habitat include Cooper's hawk and white-tailed kite. A variety of other avian species protected under the MBTA, but not rare, threatened, or endangered by local, state, or federal laws or regulations, would also be affected by removal of these vegetation communities.

Mammals. Construction-related activities within the Alternatives 1, 2, and 3 unique areas would directly impact San Diego black-tailed jackrabbit by the temporary removal of upland habitat (such as Diegan coastal sage scrub, native grassland, and nonnative grassland), as shown in Table 3.2-9 and Table 3.2-15, and Figure 3.2-2. Temporary removal of habitat would result from grading, trenching, and installation of the proposed pipeline. Construction may also result in effects to individuals from vehicular strikes or excavation equipment.

Construction-related direct effects to nonlisted special-status wildlife species would be potentially significant.

Indirect Effects

The types of indirect effects that would occur within the areas unique to each of Alternatives 1, 2, and 3 are identical to those described for nonlisted special-status wildlife species for the area common to Alternatives 1, 2, and 3. Indirect effects would be limited to those nonlisted special-status wildlife species in proximity to the Alternatives 1, 2, and 3 unique areas including red-diamond rattlesnake, Blainville's horned lizard, southern California rufous-crowned sparrow, grasshopper sparrow, northern harrier, California horned lark, loggerhead shrike, Cooper's hawk, white-tailed kite, and San Diego black-tailed jackrabbit. Construction-related indirect effects to nonlisted special-status wildlife species would be potentially significant.

Long-Term Operation and Maintenance Effects for Alternatives 1, 2, and 3

This section analyzes effects to the biological resources occurring within the vicinity of the proposed project that would result from operation and maintenance activities. Operation and maintenance effects are grouped into one discussion for all three alternatives because effects are expected to be similar since the same facilities are proposed for Alternatives 1, 2, and 3.

Operation and maintenance activities associated with the proposed project would be minimal, but routine, and would involve checking for concerns related to function, safety, and normal upkeep. The proposed conveyance pipeline appurtenances, such as vents, blow-off assemblies, and valves, would be physically examined and exercised on a monthly, quarterly, semi-annual, or annual basis, as appropriate. A single operations and maintenance staff person, traveling by means of a pick-up truck or similar vehicle, would perform routine operations and maintenance activities. The metering station, potential pump station, and potential disinfection facility would each require one maintenance trip daily. There would be no daily maintenance trip for the outfall structure given its function and infrequent expected use. Chemical deliveries for the disinfection facility would occur approximately once per week during the winter and twice per week during the summer.

Maintenance access to the proposed conveyance pipeline between the United States-Mexico border and the terminus of the future Lone Star Road would be provided via the existing SDG&E easement and

other existing dirt access roads to avoid the need to construct new roads. For the portion of the proposed conveyance pipeline along future Lone Star Road, the future roadway surface would be rough graded to future design elevations based on plans for the approved adjacent development projects prior to installation of the proposed conveyance pipeline and would be covered with gravel or revegetated following construction. Future development projects would be responsible for paving the roadway. For the portion of the proposed conveyance pipeline north of Paseo de la Fuente's southerly cul-de-sac, access would occur via existing paved roadways. Trip generation for ongoing operation and maintenance of the proposed project after it is built would not be significant (see Section 3.10, Transportation/Traffic).

In the very rare case that delivered water falls outside the specified levels of the Water Purchase Agreement (non-spec water), the District would discharge this water into O'Neal Canyon at a proposed outfall structure located south of Roll Reservoir within the culverts underneath the Alta Road berm. The water would be discharged at a rate typical of the flow rate during a rain event, ensuring that no erosion or other impacts to vegetation along the O'Neal Canyon drainage channel will occur. This increase in flow volume into O'Neal Canyon may positively affect downstream riparian habitats capable of supporting least Bell's vireo and other federally listed riparian birds by supplying the riparian vegetation with greater amounts of water and dissolved nutrients.

Special-Status Species

Direct Effects

All future proposed project operation and maintenance activities would occur within existing or future roads and facilities. As a result, direct effects to special-status plant species during operation and maintenance would not occur. While operation and maintenance activities may result in effects to special-status wildlife species from vehicular strikes with individuals crossing the roads, wildlife collisions would be minimal due to the low traffic volume. Vehicular traffic during operation and maintenance of the proposed project would not be significant (see Section 3.10, Transportation/Traffic). Direct effects to special-status species would be less than significant.

Indirect Effects

Operation and maintenance activities may result in permanent indirect effects to special-status plant and wildlife habitat surrounding the areas of disturbance from edge effects and increased exposure to exotic plants along the proposed future extension of Lone Star Road. Erosion and storm water runoff may degrade adjacent habitat. Lighting on the potential pump station and disinfection facility may impact species by disrupting the behavior of nocturnal wildlife species and could also disturb diurnal avian species night roosting in adjacent habitat. Additionally, noise produced by equipment in the potential pump station and disinfection facility may impact avian species. Indirect effects to special-status species would be significant.

Issue 2: Riparian Habitat or Other Sensitive Natural Community

Would Alternatives 1, 2, or 3, or associated facilities have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or USFWS?

Construction Effects Common to Alternatives 1, 2, and 3

Direct Effects

As described above, construction-related activities would result in permanent and temporary removal of vegetation communities, as shown in Table 3.2-9 and Table 3.2-10, and Figure 3.2-2. Permanent and temporary removal of vegetation would result from grading, trenching, and installation of the proposed pipeline and additional project infrastructure.

Other cover types, consisting of disturbed habitat, eucalyptus woodland, and urban/developed land, are not regulated or protected under any federal, state, or local law or regulation and therefore are not considered sensitive.

Upland and riparian vegetation communities are considered sensitive because they provide valuable nesting, breeding, and/or foraging habitat for many special-status species. Sensitive riparian and wetland vegetation communities include potential jurisdictional waters regulated under Section 404 of the CWA and Porter-Cologne. In the proposed project area these include tamarisk scrub and southern willow scrub. The permanent removal of these sensitive riparian and wetland vegetation communities would be significant.

Indirect Effects

Construction activities have the potential to introduce nonnative plants by carrying seeds from outside sources on vehicles, people, and equipment. Ground disturbance could promote the establishment and spread of opportunistic nonnative plants. Additionally, wildfires caused by construction are rare but may occur, and nonnative plant species often frequent recently burned areas. The potential spread of nonnative species into the surrounding vegetation communities, including riparian and wetland vegetation, would result in a permanent indirect impact.

Grading and other construction activities have the potential to create airborne dust, sedimentation, and erosion. Airborne dust may result from construction vehicle travel on dirt access roads, grading, trenching, and other ground-disturbing activities. Construction activities, including grading and vegetation clearing, may result in increased erosion and sedimentation. Unauthorized access outside of the impact area by construction workers may cause damage through trampling of plant species within adjacent vegetation communities. Construction effects from dust, sedimentation, erosion, and unauthorized access have the potential to degrade the quality of surrounding vegetation communities, including riparian and wetland vegetation. This would result in a temporary indirect impact. The indirect effects to these sensitive vegetation communities would be potentially significant.

Construction Effects to Alternatives 1, 2, and 3

Direct Effects

Construction-related activities would result in temporary removal of vegetation communities, as shown in Table 3.2-9 and Table 3.2-15, and Figure 3.2-2. Temporary removal of vegetation would result from grading, trenching, and installation of the proposed pipeline. Upland, riparian, and wetland vegetation communities are considered sensitive because they provide valuable nesting, breeding, and/or foraging habitat for many special-status species. As shown in Table 3.2-15, the Alternative 1 unique area would result in temporary effects to 0.01 acre of riparian and wetland communities and 5.15 acres of upland habitat. The Alternative 2 unique area would result in no temporary effects to riparian and wetland communities, and 4.6 acres of upland habitat. The Alternative 3 unique area would result in temporary effects to 0.45 acre of riparian and wetland communities and 4.98 acres of upland habitat. The removal

of these sensitive vegetation communities would be significant. Other cover types, consisting of disturbed habitat, eucalyptus woodland, and urban/developed land, are not regulated or protected under any federal, state, or local law or regulation and therefore effects to these cover types would not be significant.

Indirect Effects

The types of indirect effects to vegetation communities occurring within the areas unique to each of Alternatives 1, 2, and 3 are identical to those described for the area common to Alternatives 1, 2, and 3. The permanent removal of and indirect impacts to these sensitive vegetation communities would be significant.

Long-term Operation and Maintenance Effects Common to Alternatives 1, 2, and 3

Direct Effects

All future operation and maintenance activities would occur on existing or future planned roads and facilities. No additional vegetation removal would be required. As a result, direct effects to vegetation communities during long-term operation and maintenance of the proposed pipeline and associated facilities would not occur.

Indirect Effects

Long-term operation and maintenance activities may result in permanent indirect effects to vegetation communities surrounding the areas of disturbance. Permanent, indirect effects to vegetation communities may include edge effects such as light spillover from the potential pump station and disinfection facility outdoor lighting. In addition, there would be increased exposure to exotic plants along the newly created Lone Star Road extension. Erosion and storm water runoff may also degrade adjacent vegetation communities. Indirect effects to sensitive vegetation communities would be potentially significant.

Issue 3: Federally Protected Wetlands

Would Alternatives 1, 2, or 3, or associated facilities have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Construction Effects Common to Alternatives 1, 2, and 3

Direct Effects

Construction in the area common to Alternatives 1, 2, and 3 would result in varying levels of temporary direct effects to potential jurisdictional waters of the U.S. under the purview of USACE, as shown in Table 3.2-17 and Figure 3.2-2. No permanent direct effects would occur to potential jurisdictional waters of the U.S. Temporary effects to jurisdictional waters and wetlands would result from the pipeline crossing jurisdictional features. These features would be temporarily disturbed during grading, trenching, and installation of the proposed pipeline and associated facilities in the area common to Alternatives 1, 2, and 3. Further, temporary disturbance would occur to the concrete-lined channel at the mouth of the outfall structure during installation of an energy dissipater (likely consisting of concrete obstructions and directive shapes) that would be constructed on the existing concrete culvert's footprint.

Table 3.2-17 Temporary Direct Effects to Jurisdictional Waters of the U.S. and State – Area Common to Alternatives 1, 2, and 3⁽¹⁾

Type of Potential Jurisdictional Waters	Type of Habitat	Pipeline Alignment Common to Alts 1, 2, & 3	Potential Disinfection Facility Sites 1, 2, 3 and 4, Metering Station, and Potential Pump Station	Outfall Structure	Total ⁽¹⁾
Wetland	Southern Willow Scrub	0.035	-	-	0.035
Other Waters (Drainage Features [OHWM])	Culvert, Concrete Lined Channel	0.043	-	0.033	0.076
Other Waters (Drainage Features [OHWM])/ Nonvegetated Channel	Nonvegetated Channel	0.002	-	-	0.002
Total Potential Jurisdictional Waters ⁽¹⁾		0.080	-	0.033	0.113

⁽¹⁾ Values may not sum due to rounding.

OHWM = Ordinary High Water Mark

Source: AECOM 2015

Indirect Effects

Off-site erosion and sedimentation resulting from grading activities associated with construction of the proposed pipeline in the area common to Alternatives 1, 2, and 3 have the potential to result in temporary indirect effects to jurisdictional waters and wetlands. Airborne dust may result from construction vehicle travel on dirt access roads, grading, trenching, and other ground-disturbing activities and has the potential to result in temporary indirect effects to jurisdictional waters and wetlands. These effects have the potential to degrade the quality of adjacent jurisdictional waters and wetlands. This would result in a temporary indirect impact. Permanent indirect effects to federally protected jurisdictional wetlands through removal, filling, hydrological interruption, or other means would be significant.

Construction Effects to Alternatives 1, 2, or 3

No jurisdictional waters and wetlands occur within the areas unique to Alternatives 1, 2, or 3 or immediate vicinity of these areas. Therefore, no direct or indirect effects would occur to jurisdictional waters of the U.S. and state in the areas unique to Alternatives 1, 2, or 3.

Long-Term Operation and Maintenance Effects Common to Alternatives 1, 2, and 3

Direct Effects

All future operation and maintenance activities would occur on existing or future roads and associated facilities. As a result, direct effects to jurisdictional waters of the U.S. and state during long-term operation and maintenance of the proposed project would not occur.

Indirect Effects

Erosion and storm water runoff have the potential to result in permanent indirect effects to jurisdictional waters of the U.S. and state by contaminating these sensitive areas. Indirect effects to sensitive jurisdictional waters of the U.S. and state would be potentially significant.

Issue 4: Movement of Native Resident or Migratory Fish or Wildlife Species

Would Alternatives 1, 2, or 3, or associated facilities interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Construction Effects Common to Alternatives 1, 2, and 3, and Unique Areas

Direct Effects

The proposed project area is used by a variety of wildlife species for local movement. Construction activities associated with the proposed project would not result in the permanent or temporary installation of structures that would prevent wildlife (including terrestrial and avian) movement through the proposed project. The narrow (up to 200 feet wide) and linear work area that would be affected during construction is not a large distance for terrestrial and avian species to cross. While the proposed project also includes the construction of above-ground structures, such as the metering station, outfall structure, potential pump station, and potential disinfection facility, effects to species migration would be minimal due to the largely undeveloped surrounding area. The relatively small footprints of the above-ground structures would not create large obstacles for terrestrial and avian species to cross. Additionally, the pipeline would be constructed in segments and trenching would average approximately 120 feet per day. This would allow terrestrial wildlife to move throughout the remainder of proposed project impact area during construction.

A total of 34 one-way truck trips would be required per day. It is anticipated that the 24-person construction crew would each generate 6 one-way trips, for a total of 144 daily worker vehicle trips. This would not prohibit terrestrial wildlife movement between habitats. Therefore, direct permanent and temporary effects to wildlife corridors resulting from construction of the proposed project would not occur.

Indirect Effects

Indirect effects to wildlife movement (including terrestrial and avian) may result from increased human presence and noise generated during construction. However, these indirect effects would be minimal as the area of daily impact would average approximately 120 feet of pipeline trenching per day. Therefore, indirect permanent or temporary effects to wildlife corridors from construction of the proposed project would be less than significant.

Long-Term Operation and Maintenance Effects Common to Alternatives 1, 2, and 3

The proposed pipeline would be located underground and would not prevent wildlife (including terrestrial and avian) movement through the proposed project. The proposed project also includes above-ground structures consisting of the metering station, outfall structure, potential pump station, and potential disinfection facility. However, because of the proposed project's location in a largely undeveloped area, the small footprints of the above-ground structures would not create large obstacles for terrestrial and avian species to cross. Therefore, no effects to wildlife corridors resulting from operation and maintenance activities associated with the proposed project would occur.

Issues 5 and 6: Conflicts with Any Local Policies or Ordinances Protecting Biological Resources or an Adopted Habitat Conservation Plan

Would Alternatives 1, 2, or 3, or associated facilities conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Would Alternatives 1, 2, or 3, or associated facilities conflict with the provisions of an adopted habitat conservation plan; natural community conservation plan; or other approved local, regional, or state habitat conservation plan?

The proposed project would be designed to comply with all approved local, regional, state, and federal regulations, policies, and ordinances. The District is not a participant in the San Diego County MSCP Subregional Plan and is not subject to the provisions of that plan. The Otay Subarea Plan is not yet developed or approved. Therefore, no conflicts would occur with any approved regional, state, or federal regulations, policy, ordinance, or plan.

3.2.4.2 No Action Alternative

Under the No Action Alternative, no construction, including pipelines or related infrastructure, would occur and the project area would remain in its current condition. Therefore, the No Action - No Project would not result in any effects related to species identified as candidate, sensitive, or special-status species; riparian habitat or other sensitive natural community; federally protected wetlands; movement of native resident or migratory fish and wildlife species; or conflicts with local policies or plans because no construction would occur.

3.2.5 Mitigation Measures

Implementation of the proposed project would not result in significant effects to the movement of any wildlife species or migratory wildlife corridors or conflicts with adopted habitat conservation plans. No mitigation measures are required for these issues.

Mitigation measures Bio-1 through Bio-30 will reduce significant effects to candidate, sensitive, or special-status species to below a level of significance.

Bio-1 The District will identify a qualified biologist(s) approved by USFWS and CDFW. The name, documented experience, any permit numbers, and resumes for the qualified biologist(s) will be submitted to USFWS and CDFW for approval at least 7 days prior to initiation of construction. The qualified biologist(s) will monitor activities during vegetation clearing, grading, and/or construction. If sensitive species and/or habitats adjacent to the proposed project sites are inadvertently affected by activities, then the qualified biologist(s) will immediately inform the on-site construction supervisor who will temporarily halt or redirect work away from the area of impact. The District will immediately be notified of the impact and will consult with the appropriate regulatory agencies. The qualified biologist(s) will provide a monthly report to USFWS and CDFW, identifying construction activities and the results of compliance monitoring related to implementation of avoidance and minimization measures. The qualified biologist(s) will meet the following minimum qualifications:

1. Bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field (a bachelor's degree may be substituted with at least 5 years of field biology experience).
2. At least 3 years of experience in field biology.
3. At least 1 year of field experience with biological resources found in the geographic region of the proposed project.
4. Extensive knowledge of the biology and ecology of sensitive species occurring and potentially occurring within the 500-foot study area.

- Bio-2 Prior to vegetation clearing, grading, and/or construction activities that may impact sensitive species or habitats, a qualified biologist(s) will approve the location of appropriate temporary fencing and/or flagging to delineate the limits of construction and the approved construction staging areas for protection of identified sensitive resources outside the approved construction/staging zones. All construction access and circulation will be limited to designated construction/staging zones. The fencing will be checked weekly to ensure that fenced construction limits are not exceeded. This fencing will be removed upon completion of construction activities, including the planting and stabilization of seeding. Construction staging areas will be located a minimum of 100 feet from drainages, wetlands, and areas supporting sensitive habitats or species. Fueling of equipment will occur in designated fueling zones within the construction staging areas. All equipment used within the approved construction limits will be maintained to minimize and control fluid and grease leaks. Provisions will be made to contain and clean up unintentional spills of fuel, oil, or fluid.
- Bio-3 A Worker Environmental Awareness Plan will be developed and implemented prior to the start of construction. Environmental training will be led by the qualified biologist(s) and will cover the sensitive resources found on site, flagging/fencing of exclusion areas, permit requirements, and other environmental issues.
- Bio-4 Spoils, trash, and any construction-generated debris will be removed to an approved off-site disposal facility. A trash abatement program will be established. Trash and food items will be contained in closed containers and removed daily to reduce the attraction of opportunistic predators such as common ravens, coyotes, and feral cats and dogs that may prey on sensitive species.
- Bio-5 Wildfires will be prevented by exercising care when driving and by not parking construction vehicles where catalytic converters could ignite dry vegetation. All construction vehicles will carry water and shovels or fire extinguishers in the field. Shields, protective mats, or other fire prevention equipment will be used during grinding and welding to prevent or minimize the potential for fire. Smoking will take place within designated areas and away from vegetated areas. Cigarette butts will be disposed of in proper receptacles (e.g., vehicle ashtrays or outdoor metal cigarette ashtrays).
- Bio-6 When handling toxic substances, construction vehicles will carry a Hazardous Material Spill Kit for use in the event of a spill. All construction personnel working on the site will be trained in using these kits. Spill containment materials must be on site or readily available for any equipment maintenance or refueling.
- Bio-7 Construction workers will be prohibited from bringing domestic pets and firearms to the site.

- Bio-8 A Storm Water Pollution Prevention Plan (SWPPP) will be prepared prior to the start of construction. The Storm Water Pollution Prevention Plan will identify the design features and Best Management Practices (BMPs) that will be used to manage drainage-related issues (e.g., erosion and sedimentation) during construction, and operation and maintenance activities. Erosion-control measures will be regularly checked by inspectors, qualified biologist(s), and/or resident engineer. Fencing and erosion control measures in all construction areas will be inspected a minimum of once per week.
- Bio-9 All construction activities will cease during heavy rains to prevent unnecessary erosion, runoff, and sedimentation, and will not resume until conditions are suitable for the movement of equipment and materials.
- Bio-10 A Weed Management Plan will be developed and approved by the wildlife agencies prior to the commencement of construction activities. The plan will include a variety of measures that will be undertaken during construction and operation and maintenance activities to prevent the introduction and spread of new weed species. The plan will also address monitoring, plus educating personnel on weed identification and methods for avoiding and treating infestations. Weed control methods may include both physical and chemical control. If mulch is used, it is required to be certified as weed-free.
- Bio-11 Dust suppression measures will be implemented during construction to minimize the creation of dust clouds and possible degradation of sensitive vegetation communities, special-status species suitable habitat, and critical habitat. These measures include applying water at least once per day or as determined necessary by the qualified biologist(s) to prevent visible dust emissions from exceeding 100 feet in length in any direction. In addition, watering frequency will be increased to four times per day if winds exceed 25 miles per hour. Nontoxic soil stabilizers may be used on access roads to control fugitive dust, as needed.
- Bio-12 Daytime vehicle speeds will be restricted to posted speed limits on existing paved roads and to 15 miles per hour on dirt access roads during the all phases of the proposed project. Speed limit signs will be posted on dirt access roads throughout the site to remind workers of travel speed restrictions.
- Bio-13 Avoidance and minimization of indirect effects to San Diego fairy shrimp- and Riverside fairy shrimp-occupied habitat adjacent to project sites will be fulfilled through installation of construction measures such as specific BMPs (e.g., sediment fencing intended to protect vernal pools) to avoid potential adverse effects (e.g., altered hydrologic regime). No trenching will occur within vernal pool watershed areas in association with BMPs, such as sediment fencing, etc.
- Bio-14 To avoid effects to San Diego fairy shrimp and/or Riverside fairy shrimp, known occurrences within project boundaries or 250 feet of project boundaries will be identified on project construction plans and as determined necessary by the qualified biologist(s). Occupied habitat will be clearly indicated in the field with markers or exclusion fencing. Known populations and restricted areas will be monitored by the qualified biologist(s) during construction phases, as determined necessary.
- Bio-15 All clearing and grubbing in suitable Quino checkerspot butterfly habitat will occur July through December, when adult and larvae activity is reduced and host plants are not

- generally flowering or germinating. If clearing and grubbing is not feasible within this time period, written consent from USFWS is required to allow construction to proceed in this area.
- Bio-16 In the event of an unforeseen circumstance involving Quino checkerspot butterfly (e.g., Quino checkerspot butterfly becoming trapped within construction vehicle), the qualified biologist(s) will be contacted immediately and informed of the situation. If the qualified biologist(s) determines that immediate action is not required (e.g., no threat of take), the qualified biologist(s) will coordinate with USFWS within 24 hours of the event to determine the appropriate course of action. If the qualified biologist(s) determines that immediate action is necessary (e.g., threat of take), the qualified biologist(s) will determine the appropriate course of action. USFWS will be notified within 24 hours of the event and about the remedial action taken.
- Bio-17 To the extent possible, vegetation clearing will occur outside of the breeding seasons for habitat occupied by coastal California gnatcatcher and least Bell's vireo, and other avian species (e.g., coastal California gnatcatcher breeding season, February 15 through August 15; least Bell's vireo breeding season, March 15 through September 15). If vegetation clearing must occur during the coastal California gnatcatcher or least Bell's vireo breeding season, a pre-construction nest survey will be conducted within the construction footprint and 500-foot buffer by the qualified biologist(s) 10 days prior to the start of construction in any given area of the project footprint. If no active nests are discovered, construction may proceed. If active nests are observed that could be disturbed by construction activities, these nests and a 500-foot buffer will be avoided until the young have fledged and/or the monitor determines that no effects are anticipated to the nesting birds or their young. The qualified biologist(s) will be responsible for coordinating with USFWS and CDFW to determine if construction activities could disturb an active nest and when nests are no longer active. If construction ceases for 5 or more consecutive days during the nesting season, repeat nesting bird surveys will be required to ensure that new nesting locations have not been established within the construction footprint and a 500-foot buffer or greater.
- Bio-18 Noise monitoring will be conducted if construction activities are scheduled during the coastal California gnatcatcher or least Bell's vireo breeding season to determine if the construction-related noise levels will exceed 60 dBA hourly L_{eq} within 500 feet of the noise source. If nesting coastal California gnatcatcher or least Bell's vireo are in the vicinity of the project footprint and construction is occurring during the breeding season, temporary noise attenuation barriers will be built to reduce construction-related noise to below 60 dBA hourly L_{eq} . The qualified biologist(s) will be responsible for ensuring that noise attenuation barriers are successful at reducing noise levels. Documentation of the noise monitoring results will be provided to the District, USFWS, and CDFW within 45 days of completing the final noise monitoring event.
- Bio-19 Per CDFW guidance (CDFG 2012), a take avoidance survey (i.e., pre-construction clearance survey) will be conducted by a qualified biologist to determine presence or absence of western burrowing owl no less than 14 days and no more than 30 days prior to initiating construction activities. Surveys will include areas within the proposed project final footprint and a surrounding 500-foot buffer. The survey will consist of walking parallel transects and noting any fresh western burrowing owl sign or presence of western burrowing owl. The

results of the take avoidance survey will be provided to CDFW. If more than 30 days pass between the take avoidance survey and initiation of proposed project activities, additional take avoidance surveys may be required, depending on what actions have been implemented to deter western burrowing owl from moving into the proposed project footprint and buffer area. A final take avoidance survey will be conducted within the proposed project footprint within 24 hours prior to initiation of construction activities. Given the total duration of construction of the proposed project, it is expected that take avoidance surveys will be conducted in phases, in order to stay within the required survey windows associated with construction activities.

- Bio-20 If occupied burrows are found during take avoidance surveys, appropriate construction buffers or setback distances will be determined by the qualified biologist on a case-by-case basis, depending on the season in which disturbance will occur, the type of disturbance, and other factors that could influence susceptibility to disturbance (e.g., topography, vegetation, existing disturbance levels, etc.). To the extent feasible, buffers of 250 feet will be used during the breeding season (February 1 through August 31) and 165 feet will be used during the nonbreeding season (September 1 through January 31). "Shelter in place" techniques will be used if necessary to create a visual and auditory barrier between construction activities and the occupied burrow. Techniques will include placing hay bales, fencing, or another physical barrier between the occupied burrow and construction activities. The qualified biologist will determine if and/or when shelter in place is necessary and feasible for implementation. When construction activities commence adjacent to the buffer area, a qualified biologist will be present on site full time to monitor the behavior of western burrowing owl for at least 3 days. The qualified biologist will have the authority to increase the setback distance if there are signs of disturbance, such as changes in western burrowing owl behavior as a result of construction or other indications of distress.
- Bio-21 If western burrowing owl activity is detected at a burrow within the proposed project footprint during the nonbreeding season (September 1 through January 31), western burrowing owl will be excluded from active burrows and encouraged to passively relocate to suitable, unoccupied habitat outside of the exclusion area. Western burrowing owl will be excluded by installing one-way doors in burrow entrances. Although passive relocation does not result in control of the recipient area for western burrowing owl, the qualified biologists will verify that there is an acceptable "recipient" area within a reasonable distance that provides the necessary subsidies to support western burrowing owl with the goal to minimize the stress of relocation. Subsidies to be considered include suitable burrows (primary and satellite) and habitat quality (e.g., vegetation cover, diversity) equal to or greater than that from which they were relocated. If during pre-construction surveys, western burrowing owl activity is detected at a burrow within the proposed project footprint during the breeding season (February 1 through August 31), then an appropriate construction buffer or setback distance will be determined by the qualified biologist on a case-by-case basis. This buffer will be flagged and all proposed project-related activity will remain outside of the flagged area until a qualified biologist determines the burrow is no longer occupied (e.g., juveniles are foraging independently and are capable of independent survival).
- Bio-22 In the event that western burrowing owl will be excluded from the proposed project footprint and occupied burrows will be affected, a mitigation site with suitable burrows and habitat must be secured. A Western Burrowing Owl Exclusion Plan must be developed and

- approved by CDFW prior to excluding western burrowing owl from burrows. Specific objectives for western burrowing owl protection addressed by the Western Burrowing Owl Exclusion Plan are to describe exclusion methodology, burrow excavation procedures, identification of artificial burrow sites, and post-relocation monitoring and reporting. Occupied western burrowing owl burrows directly affected will be replaced as agreed to by CDFW.
- Bio-23 To the extent possible, vegetation clearing will occur outside of the breeding season for other avian species protected under the MBTA (e.g., vegetation clearing could occur September 16 through February 14. If vegetation clearing must occur during the general avian breeding season, a pre-construction nest survey will be conducted within the construction footprint and 500-foot buffer by the qualified biologist(s) 10 days prior to the start of construction in any given area of the project footprint. If no active nests are discovered, construction may proceed. If active nests are observed that could be disturbed by construction activities, these nests and an appropriately sized buffer (typically a 500-foot buffer) will be avoided until the young have fledged and/or the monitor determines that no effects are anticipated to the nesting birds or their young. If construction ceases for 5 or more consecutive days during the nesting season, repeat nesting bird surveys will be required to ensure that new nesting locations have not been established within the construction footprint and a 500-foot buffer or greater.
- Bio-24 The development footprint of the proposed project will be confined to the minimal amount of area necessary for construction and safe, reliable operation. Development of new access routes will be limited to the maximum extent possible by using existing roadways. All construction areas, staging areas, and access routes will be clearly delineated in the final engineering plans.
- Bio-25 Landscaping will include California native species that are drought tolerant for erosion control on slopes.
- Bio-26 Pump station and disinfection facility exterior lighting will be motion sensitive rather than steady burning, and will be downcast and shielded to keep light within the boundary of the proposed project.
- Bio-27 The pump station and disinfection facility equipment will be enclosed within a building, which will be designed so that noise levels outside of the building will not exceed 60 dBA (A-weighted decibels). The design parameters will be evaluated prior to construction, and tested prior to operation, by a qualified acoustician.
- Bio-28 For unavoidable effects to special-status species (and any corresponding USFWS-designated critical habitats), and sensitive vegetation communities, off-site mitigation will be provided by one, or a combination of, the following measures, in consultation with USFWS and CDFW: (1) Debit credits from the San Miguel Habitat Management Area; (2) Contribute to the preserve system of other agency MSCPs through land acquisition or purchase of mitigation banking credits; and (3) Enhance, restore, create, and preserve in perpetuity off-site habitat areas at locations and mitigation ratios to be approved by USFWS during Section 7 consultation and by CDFW during coordination for take of sensitive species.
- Bio-29 Plans for habitat enhancement, restoration (e.g., salvage and replanting of special-status plants), and creation will be prepared by persons with expertise in southern California

ecosystems and native plant revegetation techniques. Such plans will include, at a minimum, (a) location of the mitigation site(s); (b) plant species to be used, container sizes, and seeding rates; (c) schematic depicting the mitigation area(s); (d) planting schedule; (e) description of the irrigation methodology; (f) measures to control exotic vegetation at the mitigation site(s); (g) specific success criteria (e.g., percent cover of native and nonnative species, species richness); (h) detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria and preserving the mitigation site(s) in perpetuity (including conservation easements and management funding). In addition, the District will negotiate and implement long-term maintenance requirements to ensure the success of the mitigation site(s).

Bio-30 Trenches associated with pipe installation will be backfilled with earth at the end of each work day to prevent wildlife access, with the exception of the end of the open pipe, which will be left exposed. During installation, the area surrounding the end segment of exposed open pipe will be sloped at the end of each work day at an angle to allow wildlife to easily escape. Also, the open end of the exposed pipe will be covered at the end of each work day with a material flush with the open pipe entrance such as a wooden board or cap such that no wildlife, including smaller species like lizards, can enter the pipe. Should wildlife become trapped in the vicinity of the open exposed pipe, the qualified biologist(s) will remove and relocate the individual outside the construction zone.

Mitigation measure Bio-31 will reduce significant effects to riparian habitat or other sensitive natural communities to below a level of significance.

Bio-31 After completion of final grading in temporary impact areas, the construction documents will require that all graded areas within 100 feet of native vegetation are hydroseeded and/or planted with native plant species similar in composition to the adjacent undisturbed vegetation communities. The District or the construction contractor will retain a qualified biologist(s) to monitor these activities to ensure nonnative or invasive plant species are not used in the hydroseed mix or planting palettes. The hydroseeded/planted areas will be watered via a temporary drip irrigation system or watering truck. Irrigation will cease at some time after successful plant establishment and growth, to be determined by the qualified biologist(s). No fertilizers or pesticides will be used in the hydroseeded/planted areas. Any irrigation runoff from hydroseeded/planted areas will be directed away from adjacent native vegetation communities, and contained and/or treated within the development footprint of individual projects. All planting stock will be inspected for exotic invertebrate pests (e.g., Argentine ants) and any stock found to be infested with such pests will not be allowed to be used in the hydroseeded/planted areas.

Mitigation measures Bio-32 through Bio-35 will reduce significant effects to federally protected wetlands to below a level of significance.

Bio-32 Discharges will not permanently restrict or impede the passage of normal or expected high flows, or cause the permanent relocation or diversion of the flows.

Bio-33 Where turbidity or erosion occurs or is expected to occur from drainage structures, biofilters, detention basins, or other appropriate drainage catchment structures will be installed where flow conveyance occurs from a project site directly into a jurisdictional area.

- Bio-34 Temporary effects to jurisdictional waters and wetlands will be recontoured to pre-construction conditions. Temporary effects to vegetated jurisdictional waters and wetlands will also be revegetated with appropriate native vegetation or nonnative species compatible with the landscape palette.
- Bio-35 Temporary effects to jurisdictional waters will be mitigated through restoration on site at a ratio of 1:1. A restoration maintenance and monitoring plan will be prepared by a qualified restoration ecologist and will incorporate an appropriate native species planting palette to blend in with the existing and surrounding habitats. No nonnative species will be incorporated into the restoration plan. This plan will include details of site preparation, implementation and planting specifications, and maintenance and monitoring procedures. The plan will also outline yearly success criteria and remedial measures should the mitigation effort fall short of the success criteria.

Effects to jurisdictional waters will require the following permits by regulatory federal and state agencies and acts: (1) USACE, CWA, Section 404 permit for placement of dredged or fill material within waters of the U.S.; (2) RWQCB, CWA, Section 401 state water quality certification/waiver for an action that may result in degradation of waters of the state; and (3) CDFW, CFGC, Section 1602 agreement for alteration of a streambed. The proposed mitigation is subject to the resource agencies' review and discretion; thus, the mitigation obligations for the effects to jurisdictional wetland habitats may change from those presented here.

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3.3 Cultural and Paleontological Resources

This section analyzes the affected environment of Alternatives 1, 2, and 3, and associated facilities pertaining to cultural and paleontological resources. The information presented in this section is based on the Cultural Resources Assessment (CRA) (Atkins 2015b).

3.3.1 Environmental Setting/Affected Environment

The proposed study area for the cultural and paleontological resources assessment includes an area of potential effects (APE) that considers all alternative pipeline alignments and associated facilities. Specifically, the APE encompasses the footprint of these components along with a 150- to 500-foot-wide corridor. The APE is 129.27 acres and is located immediately north of the United States-Mexico border in the community of Otay Mesa (Figure 3.3-1).

The northern portion of the APE exhibits modern development, including paved roads, concrete sidewalks, and concrete water control features. The southern portion of the APE is predominately undeveloped.

3.3.1.1 Definition of Resources

At both the state and federal levels, cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, and/or scientific importance (Office of Historic Preservation 1995, National Park Service 1990). State and federal laws, however, use different terms for significant cultural resources. Significant resources are those resources that have been found eligible to the California Register of Historical Resources (CRHR) and National Register of Historic Places (NRHP), as applicable. California state law discusses significant cultural resources as “historical resources,” whereas federal law uses the terms “historic properties” and “historic resources.”

CEQA, PRC 21084.1 and CEQA Guidelines, California Code of Regulations (CCR) Title 14 Section 15064.5 defines a “historical resource” as follows:

- resource(s) listed or eligible for listing in the CRHR (14 CCR Section 15064.5[a][1])
- resource(s) either listed in the NRHP or in a “local register of historical resources” unless “the preponderance of evidence demonstrates that it is not historically or culturally significant” (14 CCR Section 15064.5[a][2])
- resources identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code (14 CCR Section 15065.5[a][2])

For listing in the CRHR, a historical resource must be significant at the local, state, or national level under one or more of the following four numbered criteria. A site will be eligible if:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;
2. It is associated with the lives of persons important to local, California, or national history;

3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; and/or
4. It has yielded or has the potential to yield information important to the prehistory or history of the local area, California, or the nation.

Under 14 CCR Section 15064.5(a)(3), the final category of “historical resources” may be determined at the discretion of the lead agency.

Section 106 (54 U.S.C. 306108) of the National Historic Preservation Act (NHPA) of 1966, as amended, and its implementing regulations (36 CFR Part 800) require Federal agencies to take into account the effects of their undertakings on NRHP-eligible historic properties. To be eligible for the NRHP, a historic property must be significant at the local, state, or national level under one or more of the following four lettered criteria. Eligible properties are those:

- A. That are associated with events that have made a significant contribution to the broad patterns of our history;
- B. That are associated with the lives of persons significant in our past;
- C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; and/or
- D. That have yielded or may be likely to yield, information important in prehistory or history.

All historical resources or historic properties eligible for listing in either the CRHR or NRHP must retain integrity, which is the authenticity of a historical resource’s physical identity evidenced by the survival of characteristics that existed during the resource’s period of significance. Resources, therefore, must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. It must also be judged with reference to the particular criteria under which a resource is proposed for nomination.

Paleontological resources are the fossilized remains or traces of multi-cellular invertebrate and vertebrate animals and multi-cellular plants, including their imprints from a previous geologic period. Fossil remains such as bones, teeth, shells, and leaves are found in the geologic deposits (rock formations) where they were originally buried. Paleontological resources include not only the actual fossil remains, but also the collecting localities, and the geologic formations containing those localities.

3.3.1.2 Cultural Resources Setting

The APE is located in the southern portion of the San Diego sub-region of the California Southern Bight Archeological province. Recent studies on Native American human occupation in San Diego County recognize the existence of at least two major cultural traditions, identified as the Early Period/Archaic and Late Period (Gallegos 2007). The cultural setting provided by Gallegos (2007) is used for the following prehistoric background:



FIGURE 3.3-1
Area of Potential Effect For All Alternatives
100032058

Source: Atkins, 2014; ESRI, 2014

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Prehistoric Background

Early Period/Archaic

The Early Period/Archaic includes the time period spanning from approximately 10,000 to 1,300 years ago, and includes the San Dieguito, La Jolla and Pauma Complexes (Gallegos 2007). San Dieguito sites are typically found on or near former pluvial lake shores, marshes, and old stream channels, and coastal sites indicate that shellfish was an important dietary resource for peoples living nearer the Pacific Ocean (Byrd and Raab 2007). Sleeping circles, trail shrines (cairns), and rock alignments have also been associated with San Dieguito sites, helping to support the conclusion that San Dieguito peoples practiced a mobile hunting and gathering lifestyle based on terrestrial and aquatic resources.

The La Jolla and Pauma Complexes are often referred to as chronologically following the San Dieguito Complex. The La Jolla Complex is associated with shell midden sites on the coast while the Pauma Complex is associated with inland sites, particularly located in valleys and sheltered canyons in northern San Diego County (Moratto 1984). Because the two complexes have similar artifact assemblages, it is believed by some archaeologists that the Pauma Complex may represent an inland variant of the La Jolla Complex (Gallegos 1987).

The La Jolla and Pauma complexes reflect subsistence patterns focused on gathering plant foods and small animals, including near-shore fish and shellfish resources (Byrd and Raab 2007).

Late Period

Two Late Period Complexes are identified in San Diego County, including the Cuyamaca and the San Luis Rey. The San Luis Rey Complex is associated with northern San Diego County, while the Cuyamaca Complex is associated with the southern San Diego coast and foothills. The Cuyamaca Complex is primarily known from the work of D.L. True at Cuyamaca Rancho State Park, which is located approximately 30 miles to the northeast of Otay Mesa. Several distinguishing traits identify the Cuyamaca Complex from the San Luis Rey Complex. These cultural identifiers include a wide range of ceramic items (bowls, pots, ollas); utilitarian and ornamental objects produced from steatite; clay-lined hearths; and defined cemeteries (Moratto 1984). Higher frequencies of milling stone tools, flaked stone tools, side-notched projectile points, and ceramics also differentiate Cuyamaca Complex sites from San Luis Rey Complex sites.

Ethnographic Background

The APE is located in the traditional territory of the Kumeyaay dialect branch of the Diegueño ethnic nation (Luomala 1978). Diegueño territory stretched along the Pacific coast from central San Diego County into Baja California, past Ensenada. From the coast, their territory extends to the east into the Yuha and Anza Borrego Deserts. Their territory then extends to the north toward San Felipe Creek and Agua Hedionda (Luomala 1978). Neighboring groups were the Luiseño and Cupeño to the north, the Cahuilla and Quechan to the east, and the Pai-pai of Baja California to the south.

In the 1920s, many Diegueño became members of the Mission Indian Federation, which was organized to lobby for self-rule on southern California reservations. During World War II, Diegueño served in the military abroad, while many Indian people moved off the reservations to work in war-related industries in Los Angeles and San Diego. Today, most people of Diegueño descent prefer to be referred to as “Bands” of Kumeyaay, and are divided into 13 federally recognized Indian tribes whose reservations are within San Diego County.

Historic Era Background

The Spanish Period (1769 to 1821) and the Mexican Period (1821 to 1848)

The Spanish achieved colonization of California through a program of military-civilian-religious conquest. The missionary component of the colonization strategy was led by Spanish priests, who were charged with converting Native Americans to Catholicism, introducing them to Spanish culture, and training them as a labor force. Ultimately, four presidios and 21 missions were established in Spanish California between 1769 and 1821 (Beck and Haase 1974).

Mexico achieved independence from Spain in 1821, and California became a distant outpost of the Mexican Republic. Under a law adopted by the Mexican congress in 1833, the former mission lands were secularized and subdivided into land grants.

American Period (1848 to Present)

The American Period began in 1848 when Mexico ceded California to the United States under the Treaty of Guadalupe Hidalgo. Much of the land that once constituted rancho holdings became available for settlement by immigrants to California.

Development in Otay Mesa commenced in the 1870s (RECON 2013; Gallegos and Associates 2006). Much of the land was acquired via the Homestead Act of 1862, through a timber culture bill that became law in 1873 and was repealed in 1891, or by direct purchase from the government or individual landowners. Many of these early settlers were German immigrants (Gallegos and Associates 2006). Farming developed throughout the 1870s, and by the end of the decade, most of the mesa was under intensive agriculture.

Within the recent decades, formerly vacant land has been developed for light industrial uses, business parks, and more recently, residential projects. Several developments occur adjacent to the APE boundaries, including industrial uses along Paseo de la Fuente. In addition, the Richard J. Donovan State Correctional Facility, the San Diego Firearms Training Center, and the County of San Diego George F. Bailey Detention Facility were constructed nearby. The San Diego Firearms Training Center and the George F. Bailey Detention Facility are located immediately adjacent to the APE and the Roll Reservoir, and were constructed between 1989 and 2003 (NETR 2013).

3.3.1.3 Paleontological Resources Setting

The project site is found in the Peninsula Ranges geomorphic region of San Diego County, which is characterized as generally being underlain by plutonic igneous rocks (County of San Diego 2011b). The project site itself is predominantly composed of Otay Formation, with limited areas of metavolcanic rocks dating to the Jurassic and Cretaceous, and landslide deposits dating to the Holocene and late Pleistocene (Tan and Kennedy 2002). These map units are stated to not have any potential to hold paleontological resources.

The Otay Formation formed during the Oligocene approximately 29 million years ago. The sediments that created the formation were fluvial in origin and the formation can be up to 400 feet thick, while the typical thickness is 120 feet thick. The Otay Formation is considered the "...richest source of late Oligocene terrestrial vertebrates in California..." with fossils such as terrestrial reptiles, birds, and mammals including tortoises, lizards, snakes, birds, shrews, rodents, rabbits, dogs, foxes, rhinoceros, and camels having been recovered (Deméré and Walsh 2003).

3.3.1.4 Cultural Resources Records Searches

CHRIS Records Search

A cultural resource records search was requested from the South Coastal Information Center (SCIC), located at San Diego State University, San Diego. A 1-mile search radius was used. The SCIC is the California Historical Resources Information System (CHRIS) historical resource data repository for San Diego and Imperial Counties. A review of the San Diego County Historic Addresses Database indicated that no historic age structures have been recorded within the APE or a 1-mile radius.

Eight archaeological resources are recorded within or partially within the APE boundary. These resources and the history of associated fieldwork are described in detail in Table 3.3-1 below. Six of the resources have been tested and found not to be significant (CA-SDi-07215A, CA-SDi-10297, CA-SDi-10668, CA-SDi-10627, CA-SDi-11793, and CA-SDi-12877) and one resource has not been formally tested or evaluated (CA-SDi-10627). The remaining resources were subject to monitoring or testing and data recovery with a variety of results. Portions of several resources were recommended as eligible for the NRHP, including CA-SDi-08654, CA-SDi-10297 (prehistoric component only), and CA-SDi-10668, or eligible for the CRHR and/or locally important as defined by San Diego County (CA-SDi-07215 [Locus B only]).

Table 3.3-1 Records Search Results of Known Cultural Resources within the APE

Site Number	Recorder Name and Date	Resource Description
CA-SDi-07215	Originally recorded by V. Taton, 1979. Updated by Corum, 1979 and Gallegos and Associates, 2006 and 2007.	Prehistoric – This resource was originally recorded in 1979 as a lithic scatter measuring approximately 42,000 square meters and lacking a midden. An update also occurred in 1979, and the resource was described as a San Dieguito site consisting of 200+ flakes/debitage, 50+ core tools, 5+ scrapers, and a blade. During the 1979 update, the dimensions of the site were identified as extending at least 0.40 mile along Alta Road and covering several knolls. A DPR 523 Update Form was completed in 2006 by Gallegos and Associates. This update provided the details of a subsurface testing program for the western portion of Locus A. The update also provides a map outlining the testing and mitigation work completed on CA-SDi-07215 between 1979 and 2006. While there are no DPR 523 Forms to outline the history of work completed on site, Gallegos and Associates shows that CA-SDi-07215 had been subject to subsequent work by Smith and Moriarty in 1985, as well as Gallegos and Associates in 2000 (Gallegos and Associates 2000) and 2002. As a result of these efforts, the boundaries of CA-SDi-07215 had been expanded and divided into two loci (CA-SDi-07215A and CA-SDi-07215B). Through testing and mitigation monitoring completed by Gallegos and Associates in 2000, 2002, and 2006, CA-SDi-07215A had been found to be not significant (Gallegos and Associates 2006), while CA-SDi-07215B was deemed significant and mitigated. In 2007, an area within the southern portion of CA-SDi-07215A was monitored during a Border Station project. No cultural deposits were encountered and this portion of the site was destroyed as a result of the project (Gallegos and Associates 2007). As a result of the testing and mitigation efforts at this site over time, CA-SDi-07215B has been found significant and all other portions of the site have been tested and found to be not significant.
CA-SDi-07218	Recorded by J. Thesken, 1979.	Prehistoric – This resource is described as isolated flakes in three areas and was determined to be not significant in 1979. However, this resource was later incorporated into a larger site recorded in the immediate vicinity (CA-SDi-10668). CA-SDi-10668 (prehistoric) has been determined not to be significant, and CA-SDi-10668 (historic) has been determined to be potentially significant (Gallegos et al. 1988).
CA-SDi-08654	Originally recorded by N. Clark, 1981. Updated by Gallegos and Associates, 2005.	Dual-component (Historic age and Prehistoric) – This site was originally recorded in 1981 as occupying 187,500 square meters and was named Kuebler Ranch. The historic age component consists of ranch buildings and the prehistoric component is a village site exhibiting a dense scatter of lithic and milling implements.

Table 3.3-1 Records Search Results of Known Cultural Resources within the APE

Site Number	Recorder Name and Date	Resource Description
		<p>A DPR 523 Update Form was completed in 2005 by Gallegos and Associates. This update provided the details of a subsurface testing program for a small area within the eastern portion of the site. The update also provided a narrative explanation and a map outlining data recovery work, testing programs and NRHP eligibility recommendations for CA-SDi-08654 completed between 1981 and 2005. While there are no DPR 523 Forms to outline the history of work completed on site, Gallegos and Associates shows that CA-SDi-08654 had been subject to subsequent work by Cultural System Research, Inc. (CSRI) in 1983 (CSRI 1983), Kyle in 1990, and Kyle and Gallegos in 1994. As a result of these collective efforts, the boundaries of CA-SDi-08654 had been expanded to the west from the Kuebler Ranch area, across Alta Road. A small percentage of the site has been tested or subjected to data recovery efforts and found to be not significant or mitigated through data recovery and another small area has been found significant. The remainder of the site has not been previously tested. These areas are shown in relation to the site boundary and APE boundary in the confidential Cultural Resources Assessment, Confidential Figure A-2: Significance Findings for Resources in the APE.</p> <p>In 1983, CSRI recommended that the site was potentially eligible for listing in the NRHP (CSRI 1983) and the site update completed by Gallegos and Associates in 2005 reiterated that all previously untested portions of the site may be eligible for the NRHP. Therefore, testing would be required in any unevaluated portions of the site to verify site significance.</p>
CA-SDi-10297	Originally recorded by Brian F. Smith, 1984. Updated by Gallegos and Associates, 2004; N. Collins of BFSa, 2007; and Gallegos and Associates, 2007.	<p>Dual-component (Historic age and Prehistoric) – The site was originally described as containing dense lithic artifact concentrations with intervening sparse scatters and a historic cistern. In 1984, the recorder noted that initial testing indicated that the site may have a subsurface component of more than 60 centimeters; however, no information was provided about the extent of the testing program.</p> <p>The site was readdressed in 2004 and the DPR 523 Update Form noted that work was completed in 2000 by Gallegos and Associates. While no DPR 523 Update Form is available for the 2000 work, a report is available to outline the testing program. The results of the testing led to a recommendation that the site was potentially eligible for inclusion in the CRHR and the NRHP (Gallegos and Associates 2000). The 2004 update noted no changes in the site condition that would compromise the integrity of the site or eligibility for inclusion in the NRHP.</p> <p>In 2007, the site was subjected to a subsurface testing program consisting of 15 STPs and one test unit by BFSa. As a result of these efforts, an intact deposit was detected and the prehistoric component was identified as having additional research potential. This rendered the prehistoric component an important resource. However, the historic age component was deemed an isolated occurrence and determined to be not important pursuant to CEQA.</p> <p>Gallegos and Associates completed monitoring activities within the southern portion of the site in 2007. During construction monitoring in 2007, lithic and groundstone tools, a shell fragment, and historic age artifacts were recovered. The prehistoric component was found to represent Early Period Archaic (middle Holocene) occupation and diagnostic historic age artifacts represented a date range of 1880 to 1915 (Gallegos and Associates 2007).</p> <p>In the confidential Cultural Resources Assessment, Confidential Figure A-2: Significance Findings for Resources in the APE, the prehistoric component is shown as significant.</p>
CA-SDi-10627	Originally recorded by S. Hector and S. Wade of RECON, 1986. Updated by N. Blotner and S. Clowery of HDRe2M, 2010.	<p>Prehistoric – First recorded in 1986, this site was described as a surface scatter characterized by an abundance of stone tools made from locally abundant green felsite. At this time, the site measured about 30,000 square meters. Two test units were excavated to the west of Alta Road and they returned negative results. The site was described as similar to CA-SDi-07215 and CA-SDi-08654 in artifact content and potentially related; however, no intervening artifacts were observed at the surface.</p> <p>This site was readdressed in 2010 via a pedestrian survey, but no artifacts, ecofacts, features, or midden soils were identified either within or outside the recorded site boundaries.</p>

Table 3.3-1 Records Search Results of Known Cultural Resources within the APE

Site Number	Recorder Name and Date	Resource Description
CA-SDi-10668	Originally recorded by J. Thesken, 1979. Updated by C. Kyle of WESTEC, 1986 and N. Blotner and S. Clowery of HDRe2M, 2010.	<p>Dual-component (Historic age and Prehistoric) – This resource was originally recorded as isolated flakes in three areas, but was updated by WESTEC in 1986 as a multi-component site consisting of six loci (Loci A through F). The site also subsumed CA-SDi-8655, CA-SDi-8656, and CA-SDi-7218.</p> <p>The prehistoric component was characterized as a quarry site with associated lithic scatters and flaking stations. The historic age component consists of a mortar, cement, asphaltum and rock cistern, an unattached metal pipe, and glass and shell fragments around the cistern. A line of eucalyptus trees and a cement trough were also noted. The historic age component was assigned a date of circa 1930. The prehistoric component was evaluated and determined not to be significant. The historic component was evaluated and determined to be significant. Mitigation was recommended (Gallegos et al. 1988) and completed (Phillips and Van Wormer 1991) for the historic component.</p> <p>In 2010, HDRe2M visited the site and failed to relocate the historic age resources. At this time, the recorders noted that most of the site had been destroyed by construction of the East Mesa Detention Center (George F. Bailey Detention Facility). A review of aerial imagery in 2010 indicated that some areas of exposed native soil still exist at the southern, western, and northern boundaries of the site; however, the majority of the site no longer existed.</p> <p>This site is shown as not previously tested in the confidential Cultural Resources Assessment, Confidential Figure A-2: Significance Findings for Resources in the APE. However, it is possible that this site may have been destroyed by previous development.</p>
CA-SDi-11793	Recorded by Gross, Robbins-Wade, Smith, and Jacobson of Affinis, 1989. Updated by M. Robbins-Wade of Affinis, 2005-2006 and N. Collins of BFSA, 2007.	<p>Prehistoric – This site was initially recorded in 1989 as a sparse lithic scatter with flakes/debitage and cores (Affinis 1990). At this time, the site measured approximately 46,730 square meters and was described as highly disturbed due to plowing and expected future plowing activities.</p> <p>The site was relocated in by C. Kyle in 2001 and a new bedrock milling feature was detected. Extended Phase I testing was not recommended at the portion of this site addressed in 2001 in compliance with the definition for sparse lithic scatters as outlined by the Management Plan for Otay Mesa Prehistoric Resources (Kyle Consulting 2001; Gallegos and Associates 1998).</p> <p>In 2005—2006, Affinis subjected the majority of the site to subsurface testing, with the exception of two small areas containing sensitive biological resources. The testing program included 15 STPs throughout the site and yielded minimal subsurface artifact content, characterized bydebitage. These findings led to a recommendation that the site was not significant.</p> <p>BFSA addressed the eastern edge of the site in 2007 and completed three STPs. As a result of these field efforts, the site was determined not important pursuant to CEQA. As a result of the testing efforts, the majority of the site has been subjected to subsurface examination and the site has been determined to be not significant. This is shown in the confidential Cultural Resources Assessment, Confidential Figure A-2: Significance Findings for Resources in the APE.</p>
CA-SDi-12877	Recorded by D. Huey and S. Campbell of ERCE, 1991.	<p>Prehistoric – Recorded in 1991 as a light density lithic scatter with San Diego Peak metavolcanic tools anddebitage. At this time, the site was described as occupying 183,000 square meters and exhibiting good integrity.</p> <p>Recommendations provided in the East Otay Mesa Specific Plan Cultural Resources Technical Report indicate that testing is still needed at this site to determine site significance (Gallegos and Associates 1993).</p> <p>In 2000, Gallegos and Associates completed a surface collection and four STPs. As a result of this work, the site was determined to lack a subsurface component. In addition, the site was recommended as not significant, ineligible for the CRHR, and ineligible for the NRHP (Gallegos and Associates 2000).</p> <p>The site could not be relocated during a survey in 2001 and was described as destroyed. Further, extended Phase I testing was not recommended at this site (Kyle Consulting 2001).</p>

Table 3.3-1 Records Search Results of Known Cultural Resources within the APE

Site Number	Recorder Name and Date	Resource Description
		In 2008, SHPO provided concurrence and confirmed the ineligibility of this site for the NRHP (Rosen 2008).

Source: Atkins 2015b

Native American Heritage Commission Records Search

A letter was sent to the Native American Heritage Commission (NAHC) to determine whether any sacred sites were listed in the Sacred Land Files (SLF) for the APE and the general vicinity. The response from the NAHC indicated that no tribal resources were known within the APE. However, the response noted that there are Native American sacred sites in adjacent U.S. Geological Survey (USGS) sections (not within the APE for the proposed project). The NAHC provided a listing of tribal contacts that might have knowledge about the APE, and might have knowledge about any sacred sites or resources not listed in the SLF. The results of the information scoping process completed to date are included in the CRA (refer to Appendix C of the Cultural Resources Assessment [Atkins 2015b]).

Tribal Outreach

Letters were sent to each of the listed tribal contacts. Responses received indicate that the APE and vicinity have a high sensitivity for Native American resources. Specifically, a letter was received from the Tribal Historical Preservation Officer (THPO) for the Viejas Band of Kumeyaay Indians, outlining the presence of villages and sacred sites. The THPO noted that the APE is located within or near an area containing five named village sites, including Uu-Tai, Jaurial, Jan-at, Chiap, and Aly-Suhui, and that the project area contains many sites considered sacred to the Kumeyaay people.

In July 2014, the District made changes to the proposed project alignment alternatives. Another round of letters were sent to each of the NAHC listed tribal contacts to inform the Indian tribes of the proposed alignment changes.

In April 2015, the Department sent letters to 17 other tribal governments in San Diego County requesting their participation in the preparation of the Draft EIR/EIS. The Department received a response from the Rincon Band of Luiseño Indians, who stated that the identified location is not within the Luiseño Aboriginal Territory. On June 23, 2015, the District and the Department met with members of the Viejas Band of Kumeyaay Indians. The meeting included a tour of the project alignment, discussions of efforts made to locate cultural resources within the project alignment, and discussions of suitable mitigation for the project.

Intensive Pedestrian Survey

An initial pedestrian survey of the APE occurred in September 2013. Additional pedestrian surveys occurred in April 2013, October 2014, and January 2015. The survey covered a 150-foot to 500-foot-wide corridor along the proposed pipeline alternative alignments and locations for additional infrastructure. The majority of the survey consisted of a 150-foot-wide corridor; however, a 500-foot-wide corridor was surveyed for the southern portion of Alternatives 2 and 3 that crosses under the existing SDG&E power transmission lines and easement and runs south to the United States-Mexico border. The additional width was surveyed to provide input into the development of the three alternative alignments. The 500-foot-wide survey corridor also includes the potential location near the border for a collocated meter station, disinfection facility, and pump station.

During the pedestrian survey, a total of eight previously recorded resources were revisited and reassessed and two isolated finds were detected. Due to the presence of pavement/concrete and ornamental landscaping within the developed portions of the APE, including Alta Road and Paseo de la Fuente; soil disturbances resulting from development; and negligible surface visibility in areas containing dense vegetation, the majority of the sites were not observed at the surface. Two prehistoric isolated finds were also encountered and recorded during the survey (Isolate 02 and Isolate 03). Isolate 02 is a small piece of metavolcanic shatter and Isolate 03 is a metavolcanic core. These resources, a summary of past research, and existing conditions within the APE are summarized in Table 3.3-2 below.

Table 3.3-2 Updated Site Conditions for Known Cultural Resources within the APE

Site Number	Previous Research	Existing Site Conditions within the APE
CA-SDi-07215	Prehistoric – A lithic scatter consisting of two loci (CA-SDi-07215 [Locus A] and CA-SDi-07215 [Locus B]). This resource has been subject to a variety of testing and mitigation efforts. As a result of these efforts, CA-SDi-07215 [Locus B] has been found significant and all other portions of the site have been tested and found to be not significant.	This site is currently obscured by pavement/ concrete, ornamental landscaping, and nonnative vegetation associated with Alta Road and Paseo de la Fuente.
CA-SDi-07218	Prehistoric – An isolated find incorporated into CA-SDi-10668.	See CA-SDi-10668.
CA-SDi-08654	Dual-component (Historic age and Prehistoric) –The historic age component consists of ranch buildings (Kuebler Ranch) and the prehistoric component is a village site exhibiting a dense scatter of lithic and milling implements. In 1983, the site was recommended as potentially eligible for listing in the NRHP (CSRI 1983). Portions of this site have been tested and a small area in the vicinity of the ranch buildings was investigated via a data recovery program. As a result of these efforts, the area nearer the ranch buildings has been determined mitigated or disturbed and not significant, a small area was found to be significant, and the remainder of the site has not been tested for a subsurface component.	This site is currently obscured by pavement/concrete and ornamental landscaping associated with Alta Road and could not be relocated in areas exhibiting observable soils. These findings may have been due to soil disturbances, as the area containing the potential disinfection facility site to the east of the intersection of Alta Road and Donovan State Prison Road appears to have been previously graded and leveled.
CA-SDi-10297	Dual-component (Historic age and Prehistoric) – The prehistoric component is composed of dense lithic artifact concentrations with intervening sparse scatters and the historic age component is a cistern. The site was identified as potentially eligible for the CRHR and the NRHP in 2000 (Gallegos and Associates 2000). Since 2000, this site has been tested and monitored during construction activities. As a result, the historic age component was deemed an isolated occurrence and determined to be not important pursuant to CEQA. The prehistoric component was determined an important resource. Thus, the prehistoric component may be considered potentially eligible for listing in the CRHR and the NRHP.	This site is currently obscured by pavement/concrete and ornamental landscaping associated with Paseo de la Fuente.
CA-SDi-10627	Prehistoric – A lithic scatter. This site was tested in 1986 with two 1 by 1-meter units, both of which had negative results for cultural resources. This site could not be relocated in 2010.	This site is currently obscured by pavement/concrete and ornamental landscaping associated with Alta Road.
CA-SDi-10668	Dual-component (Historic age and Prehistoric) – The prehistoric component is a quarry site with associated	This site could not be relocated within the APE during the survey. These findings may have been due to soil

Table 3.3-2 Updated Site Conditions for Known Cultural Resources within the APE

Site Number	Previous Research	Existing Site Conditions within the APE
	<p>lithic scatters and flaking stations. The historic age component consists of a cistern, metal pipe, and glass fragments dating to circa 1930.</p> <p>The historic component of this resource was identified as eligible for the NRHP in 1988 (Gallegos et al. 1988), while the prehistoric component was not. Mitigation was recommended for the historic portion of the resource. The site was subjected to test excavations and cultural resources monitoring during construction of the detention facility (Phillips and Van Wormer 1991).</p> <p>In 2010, the historic age resources could not be relocated and the site was described as being mostly destroyed. The northeast portion of the site is currently occupied by the San Diego Firearms Training Center and the County of San Diego George F. Bailey Detention Facility. Nonetheless, this site has not been evaluated.</p>	disturbances and the presence of vegetation, resulting in decreased surface visibility.
CA-SDi-11793	Prehistoric – A sparse lithic scatter that has been tested for subsurface deposits. As a result of testing efforts, the site was found to be not significant/not important.	This site could not be relocated. The lack of observable artifact content was likely due to negligible surface visibility as a result of dense nonnative grassland in all areas not currently occupied by dirt roads.
CA-SDi-12877	Prehistoric – A light density lithic scatter that was tested in 2000. As a result of the testing efforts, the site was determined to lack a subsurface component. In addition, the site was recommended as not significant, ineligible for the CRHR and ineligible for the NRHP (Gallegos and Associates 2000). In 2008, SHPO provided concurrence and confirmed the ineligibility of this site for the NRHP (Rosen 2008).	Two pieces of debitage were noted within the Proposed Alternative 1 Alignment; however, no other signs of the site were observed in proposed Alternative 2 or 3. These findings were likely due to the presence of dense nonnative grassland and resultant negligible surface visibility.
Isolate 02/ Isolate 03	Not Applicable.	Two isolated artifacts recorded as Isolate 02/Isolate 03. Isolate 02 is piece of metavolcanic shatter measuring 4.5 by 3 by 1.5 centimeters and is located at 0509261 mE // 3602494 mN (NAD 83). Isolate 03 is a metavolcanic core with approximately 10 flake scars. It measures 7 by 5 by 4.5 centimeters and is located at 0509281 mE // 3602356 mN (NAD 83). Isolate 02/Isolate 03 was detected within Alternatives 2 and 3 and where the alignment turns to the west from the northwest-southeast-trending SDG&E transmission line.

3.3.2 Regulatory Setting

3.3.2.1 Federal Regulations and Standards

National Historic Preservation Act

In accordance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, federal agencies take into account the effects of their undertakings on historic properties, and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment. The Section 106 process involves efforts to identify historic properties potentially affected by the undertaking; assess the

undertaking's effects; and seek ways to avoid, minimize, or mitigate any adverse effects on historic properties. To help identify these historic properties and provide community involvement, consulting parties are identified through coordination with the appropriate SHPO and/or THPO.

National Register of Historic Places

The NHPA established the NRHP as the official federal list of cultural resources that have been nominated by state offices for their historical significance at the local, state, or national level. Listing in the NRHP assists in preservation of historic properties through the following actions: formal recognition of a property's historical, architectural, or archaeological significance; consideration in planning for federal, federally licensed, or federally assisted projects; eligibility for federal tax benefits; consideration of historic values in the decision to issue a surface mining permit; and qualification for federal grants for historic preservation, when funds are available.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (NAGPRA) is a federal law passed in 1990. NAGPRA provides a process for museums and federal agencies to return certain Native American cultural items—human remains, funerary objects, sacred objects, or objects of cultural patrimony—to lineal descendants, and culturally affiliated Indian tribes and Native Hawaiian organizations. NAGPRA includes provisions for unclaimed and culturally unidentifiable Native American cultural items, intentional and inadvertent discovery of Native American cultural items on federal and tribal lands, and penalties for noncompliance and illegal trafficking.

3.3.2.2 State Regulations and Standards

CEQA Guidelines Section 15064.5

Section 15064.5 of the CEQA Guidelines provides guidance on determining the significance of effects to archaeological and historical resources. The term "historical resources" is defined to include the following:

- 1) A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR.
- 2) A resource included in a local register of historical resources (as defined in PRC Section 5020.1(k)) or identified as significant in a historical resource survey (meeting the requirements of PRC Section 5024.1(g)), unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- 3) Any object, building, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant to the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.
- 4) The fact that a resource does not meet one of the above-listed criteria does not preclude a lead agency from determining that the resource may be a historical resource.

A project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment.

California Register of Historical Resources (PRC Section 5020 et seq.)

State law also protects cultural resources by requiring evaluations of the significance of prehistoric and historical resources. The California criteria for the register are nearly identical to those for the NRHP. SHPO maintains the CRHR. Properties listed, or formally designated eligible for listing, in the NRHP are automatically listed in the CRHR, as are State Landmarks and Points of Interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

California Health and Safety Code Section 7050.5

California Health and Safety Code Section 7050.5, Disturbance of Human Remains, establishes intentional disturbance, mutilation, or removal of interred human remains as a misdemeanor and specifies protocol for the inadvertent discovery of human remains.

California PRC Section 5097.9

California PRC 5097.9 prohibits interference with Native American religion or damage to cemeteries or places of worship and requires the NAHC to immediately notify the Most Likely Descendant (MLD) when it receives notification of a discovery of Native American human remains pursuant to California Health and Safety Code 7050.5 (described above).

California Native American Graves Protection and Repatriation Act

The California NAGPRA, enacted in 2001, requires all state agencies and museums that receive state funding and that have possession or control over collections of human remains or cultural items, as defined, to complete an inventory and summary of these remains and items on or before January 1, 2003, with certain exceptions. California NAGPRA also provides a process for the identification and repatriation of these items to the appropriate Indian tribes.

3.3.2.3 Local Regulations and Standards

County of San Diego Code of Regulatory Ordinances Sections 86.601-86.608, Resource Protection Ordinance

The Resource Protection Ordinance (RPO) requires that cultural resources be evaluated as part of the County's discretionary environmental review process.

Conservation Element (Part X) of the San Diego County General Plan

The Conservation Element provides policies for the protection of natural and cultural resources through COS-7.1-7.6 for archaeological resources, COS-8.1- 8.2 for built environment resources, and COS-9.1-9.2 for paleontological resources.

Mills Act (San Diego County) – Historical Property Contracts, 2002

Ordinance 9425, amended by Ordinance 9628, provides for reduced property taxes on eligible historic properties, if the owner agrees to maintain and preserve the property in accordance with the standards and guidelines established by the Secretary of the Interior.

San Diego County Local Register of Historical Resources, 2002

The Local Register is maintained as a guide indicating which properties are to be protected from substantial adverse change. The Historic Site Board acts as an advisory body to provide decision makers

with input regarding cultural resources and is responsible for reviewing resources seeking participation in the Mills Act as well as projects with significant cultural resources.

Zoning Ordinance

Sections 5700-5749 of the Zoning Ordinance provide the procedures for landmarking historic or archaeological resources with an “H” (Historic). The application of this designator to a property requires the owner to submit and receive approval by the Department of Planning and Land Use of a site plan for any changes to the exterior of a resource. It also identifies the only situations in which a landmarked resource may be demolished or relocated.

3.3.3 Thresholds of Significance

3.3.3.1 CEQA Significance Criteria

Thresholds used to evaluate potential effects to cultural resources are based on applicable criteria in the State CEQA Guidelines (CCR Sections 15000-15387), Appendix G. Based on Appendix G of the CEQA Guidelines, a significant impact to cultural (historical and/or archaeological) or paleontological resources would occur if the proposed action would:

- 1) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5.
- 2) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.
- 3) Disturb any human remains, including those interred outside of formal cemeteries.
- 4) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

3.3.3.2 NEPA Considerations

The Department considers whether the project is consistent with the federal laws and regulations discussed above. These include the NHPA and NAGPRA. NHPA sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for the NRHP. The federal significance standard established for cultural resources is defined in the NHPA, specifically Section 106. In accordance with Section 106, federal agencies take into account the effects of their undertakings on such properties and allow the ACHP the opportunity to comment on those undertakings, following regulations issued by the ACHP.

3.3.4 Applicable Regulatory Measures

As described in Section 3.1.4, implementation of the District’s WRMP, as identified in the WRMP PEIR, includes PDFs and SCPs to reduce potential environmental effects on cultural resources that result from District projects. The following SCP is relevant to the proposed project:

- Cul-SCP-1 The District will implement the provisions of California Health and Safety Code Section 7050.5 and PRC Section 5097.98, which establish procedures to be followed if Native American or other skeletal remains are discovered during construction of a project, including the treatment of remains prior to, during, and after evaluation, and reburial procedures.

3.3.5 Environmental Effects

3.3.5.1 Alternatives 1, 2, and 3

Issue 1: Historical Resources

Would Alternatives 1, 2, or 3 cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

The proposed project's APE was assessed for the presence of cultural resources, including historical resources, pursuant to CEQA and historic properties as outlined by Section 106 of the NHPA, as amended. The results of the SCIC records search indicated that no historic structures have been recorded within the APE or the overall 1-mile search radius based on a review of the San Diego County Historic Addresses Database. Therefore, implementation of Alternatives 1, 2, or 3 would not cause a substantial adverse change in the significance of a historical resource. Effects would be less than significant.

Issue 2: Archaeological Resources

Would Alternatives 1, 2, or 3 cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5?

Alternative 1

Effects on archaeological resources generally occur as the result of construction activities, such as grading or trenching, which could potentially damage or destroy unknown buried archaeological resources. Eight resources are located within or partially within the APE of Alternative 1. These eight archaeological sites are CA-SDi-07215 [Locus A], CA-SDi-08654, CA-SDi-10627, CA-SDi-10668, CA-SDi-07218, CA-SDi-10297, CA-SDi-11793, and CA-SDi-12877.

CA-SDi-07215 [Locus A], CA-SDi-11793, and CA-SDi-12877. These sites were evaluated and determined not to be significant resources under CEQA and Section 106. However, there is the potential for trenching within Alta Road associated with construction of Alternative 1 to reach native soils that could contain artifacts or features from these sites. Such discoveries could potentially be substantive enough to change the NRHP/CRHR recommendations for the sites, and project-related disturbances could have a negative adverse effect to the site. This represents a potentially significant impact if unknown cultural resources associated with these sites were damaged or destroyed during construction activities.

CA-SDi-08654. This site has not been evaluated for significance under CEQA and Section 106 and may be potentially affected by construction of Alternative 1. This archaeological site is located under the paved portion of Alta Road where the pipeline would be installed. Construction activities associated with Alternative 1 would not impact native soils adjacent to the paved portion of Alta Road because the construction activities would be contained solely within the existing paved roadway. However, the maximum vertical effects associated with the installation of the pipeline within the paved roadway would average approximately 10 feet of depth below current ground surface, with possible depths of up to 25 feet below current ground surface in some areas. Therefore, it is possible that the trenching activities associated with the installation of the pipeline within Alta Road could reach native soils that could potentially contain artifacts or features from the site. This represents a potentially significant impact if unknown cultural resources associated with this site were damaged or destroyed during construction activities.

Additionally, the proposed project also includes a disinfection facility within the site boundary east of Alta Road. Construction activities related to the disinfection facility would also reach native soils and potentially impact CA-SDi-08654. However, as stated above, any affected sites would require Phase II testing and evaluation to determine if the sites meet the criteria of significant resources under CEQA and Section 106. Similar ancillary procedures would follow if these criteria are met, as discussed for CA-SDi-07215, CA-SDi-11793, and CA-SDi-12877 above. In addition, testing is recommended within the site boundaries adjacent to Alta Road that may be affected by the disinfection facility because the proposed project would impact this area. Conversely, testing is not recommended for areas of the site not affected by the project since the testing would cause more disturbance to the sites than the project itself. This represents a potentially significant impact if unknown cultural resources associated with this site were damaged or destroyed during construction activities.

CA-SDi-10297. This site has been evaluated under CEQA and Section 106. A portion of the site has been found to be a significant resource; however, the majority of the site, including the portion that would be affected by the proposed project, has been found to not be significant. However, it is possible that the trenching within Alta Road to construct the pipeline could reach native soils that could contain artifacts or features from the site. Such discoveries could be substantive enough to change the NRHP/CRHR recommendations for the site, and project-related disturbances could have a negative adverse effect to the site. This represents a potentially significant impact if unknown cultural resources associated with this site were damaged or destroyed during construction activities.

CA-SDi-10627. This site has been evaluated under CEQA and Section 106 and found to be not significant. However, it is possible that the trenching within Alta Road to construct the pipeline could reach native soils that could contain artifacts or features from the site. Such discoveries could be substantive enough to change the NRHP/CRHR recommendations for the site, and project-related disturbances could have a negative adverse effect to the site. This represents a potentially significant impact if unknown cultural resources associated with this site were damaged or destroyed during construction activities.

CA-SDi-10668 and CA-SDi-07218. These sites are within the footprint of the potential disinfection facility sites. Construction of Alternative 1 would potentially impact these sites during trenching activities. This represents a potentially significant impact if unknown cultural resources associated with this site were damaged or destroyed during construction activities.

Based on the results of the records searches and the pedestrian survey, construction of Alternative 1 has the potential to cause a substantial adverse change in the significance of an archaeological resource as defined in CEQA Guidelines Section 15064.5, and to result in adverse effects to historic properties pursuant to Section 106 of the NHPA, as amended. This represents a potentially significant impact associated with unknown buried archaeological resources. Mitigation is required.

Alternative 2

The same archaeological sites located within the Alternative 1 portion of the APE are also located within the Alternative 2 portion of the APE; therefore, refer to the discussion under Alternative 1 for effects associated with adverse change in the significance of unknown buried archaeological resources during the construction of Alternative 2. This represents a potentially significant impact associated with unknown buried archaeological resources. Mitigation is required.

Alternative 3

The same archaeological sites located within the Alternative 1 portion of the APE are also located within the Alternative 3 portion of the APE; therefore, refer to the discussion under Alternative 1 for effects

associated with adverse change in the significance of unknown buried archaeological resources during the construction of Alternative 3. In addition, the pedestrian survey conducted for Alternative 3 identified Isolate 02/Isolate 03 within the Alternative 3 portion of the project's APE. As an isolate, this resource is not considered significant.

Issue 3: Paleontological Resources

Would Alternatives 1, 2, or 3 directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

According to the District's WRMP, the proposed project is underlain by the geologic formation that corresponds with Oligocene to Pleistocene sandstone (OWD 2010a). This geologic formation is considered to have a high potential for containing paleontological resources (OWD 2010a). Trenching activities associated with the installation of the pipeline would have maximum vertical effects that average approximately 10 feet in depth below current ground surface, with possible depths of up to 25 feet below current ground surface in some areas. These trenching depths have the potential to reach native soils which could contain unknown buried paleontological resources. As such, there is a high possibility that ground-disturbing activities associated with construction of the proposed project may uncover paleontological resources. In the event that paleontological resources are encountered during construction, such resources could potentially be damaged or destroyed. Therefore, implementation of the proposed project would result in a potentially significant impact associated with paleontological resources.

Issue 4: Human Remains

Would Alternatives 1, 2, or 3 disturb any human remains, including those interred outside of formal cemeteries?

As stated in Section 3.3.1.4 above, the SCIC records search did not identify any known archaeological sites that contain human remains within the project's APE; however, the records search did identify one site (CA-SDi-12704) approximately 0.25 mile from the APE boundaries that contains human remains. The close proximity of this site (CA-SDi-12704) to the proposed project site indicates the presence of human remains within the overall region due to prehistoric human habitation of the region. Further, there is always the possibility that ground-disturbing activities associated with construction may potentially uncover presently obscured or buried unknown human remains. If human remains are encountered during construction, the County Coroner would be notified immediately and the find would be handled in accordance with California Health and Safety Code Section 7050.5 and California PRC Section 5097.98. Implementation of mitigation measure Cul-9 requires compliance with California Health and Safety Code Section 7050.5 and California PRC Section 5097.98 in order to reduce effects to human remains to below a level of significance. If human remains are encountered, their ultimate disposition would be governed by NAGPRA and California NAGPRA.

3.3.5.2 No Action Alternative

Under the No Action Alternative, no construction, including pipelines or related infrastructure, would occur and the project area would remain in its current condition. Therefore, the No Action - No Project would not result in any effects related to historical resources, archaeological resources, paleontological resources, or human remains because no construction would occur.

3.3.6 Mitigation Measures

Although intensive level cultural resources field studies were completed for this project, it is always possible that construction activities associated with the development of Alternatives 1, 2, 3, or associated facilities would result in potentially significant effects to unknown buried archaeological resources. However, implementation of mitigation measures Cul-1 through Cul-3 will reduce effects to below a level of significance. These measures were discussed and agreed upon with the SHPO in a conference call on July 10, 2014. It was agreed that, with the adoption of these measures, formal consultation with the SHPO under Section 106 of the NHPA would not be required. Mitigation measures Cul-1 through Cul-2 have been adapted from the WRMP Program EIR and modified to reflect the conditions and parameters of the proposed project.

Cul-1 Qualified Archaeologist Retention. Prior to trenching or grading of any selected alignment alternative, the District will retain a qualified archaeologist to oversee all aspects of ground disturbance associated with this project. All qualified archaeologists will be professionals who meet the Secretary of the Interior's Professional Qualification Standards in Archaeology (per 36 CFR Part 61). The archaeologist will prepare a Cultural Resources Inadvertent Discovery Plan (CRIDP). The CRIDP will outline the rationale and necessity for any cultural resources monitoring deemed necessary to the sensitivity of the project area. The CRIDP will also outline the extent and nature of tribal monitoring for the project. At a minimum the CRIDP will include:

1. That a preconstruction meeting will be held that includes the archaeologist, construction supervisor and/or grading contractor, tribal monitor, and other appropriate personnel to go over the cultural resources monitoring program.
2. The archaeologist will (at that meeting or subsequently) submit to the District a copy of the site/grading plan that identifies areas to be monitored.
3. The archaeologist will coordinate with the construction supervisor and the District on the construction schedule to identify when and where monitoring is to begin, including the start date for monitoring.
4. The archaeologist will be present during grading/excavation and will document such activity on a standardized form. A record of monitoring activity will be submitted to the District each month and at the end of monitoring.
5. In the event archaeological resources are discovered during ground-disturbing activities, the on-site construction supervisor will be notified and will redirect work away from the location of the discovery to allow for preliminary evaluation of potentially significant archaeological resources. The District will consult with the archaeologist to consider means of avoiding or reducing ground disturbance within the archaeological site boundaries, including minor modifications of project footprints, placement of protective fill, establishment of a preservation easement, or other means. If development cannot avoid ground disturbance within the archaeological site boundaries then the District will implement the measures listed below.
 - i. A qualified archaeologist will prepare a research design and archaeological data recovery plan that will capture those categories of data for which the site is significant, and implement the data recovery plan. The significance of the

discovered resources will be determined in consultation with the tribal monitor, as appropriate.

- ii. If, in the opinion of the qualified archaeologist and in light of the data available, the significance of the site is such that data recovery cannot capture the values that qualify the site for inclusion in the CRHR, then the District will reconsider project plans in light of the high value of the resource, and implement more substantial project modifications that will allow the site to be preserved intact, such as redesign, placement of fill, or relocation or abandonment.
- iii. A qualified archaeologist will perform appropriate technical analyses, prepare a report and file it with the SCIC, and provide for the permanent curation of recovered resources, as follows:
 - (a) The archaeologist will ensure that all significant cultural resources collected are cleaned, catalogued, and analyzed to identify function and chronology as they relate to the history of the area; that faunal material is identified as to species; that specialty studies are completed, as appropriate; and that a letter of acceptance from the curation institution has been submitted to the District.
 - (b) Curation of artifacts will be completed in consultation with the tribal monitor, as applicable.
 - (c) The construction supervisor will be notified by the archaeologist when the discovered resources have been collected and removed from the site for evaluation, at which time the construction supervisor will direct work to continue in the location of the discovery.

Cul-2 Pre-Construction Consultation. Prior to construction, the District will provide evidence to the SHPO and NAHC that Indian tribes requesting consultation with the applicants regarding the project design and effects on cultural resources were consulted. In addition, the applicant will provide evidence to the SHPO and NAHC that Indian tribes that have expressed interest in the project during any phase (i.e., project application through end of construction) are given the opportunity to participate in additional cultural resources surveys, when necessary, and cultural resources monitoring when performed by the approved cultural resources consultant.

To outline the expected duties and responsibilities of all parties involved, the District and the approved cultural resources consultant will prepare a Native American Participation Plan. This plan should be incorporated into the CRIDP. Indian tribes that have expressed interest in the project prior to construction will be given the opportunity to participate in development of the plan. At minimum, the plan will specify that:

1. Tribal monitors, if approved by an Indian tribe, are expected to participate in worker environmental awareness and health and safety training and follow all health and safety protocols.
2. Attendance by tribal monitors during construction of the project is at the discretion of the Indian tribe, and the absence of a tribal monitor, should the Indian tribes choose to forgo monitoring for some reason, will not delay work.

3. The tribal monitors will have the authority to halt work and notify the approved cultural resources consultant if they find a cultural resource that may require recordation and evaluation.
4. Interpretation of a find will be requested from tribal monitors involved with the discovery, evaluation, or data recovery of unanticipated finds for inclusion in the final Cultural Resources Report.
5. The Indian tribes involved with preparation of the Native American Participation Plan will be given the opportunity to participate in the development of Testing and Evaluation Plans) and Data Recovery Plans if the development of these plans is required.
6. Tribal monitors approved by an Indian tribe for monitoring work on the project will be notified 30 days prior to start of construction the various project components.
7. The tribal monitors will be compensated for their time. If more than one tribal group wishes to participate in the monitoring, the District will work out an agreement for sharing of monitoring compensation.

Cul-3 Cultural Resources Reporting. Prior to final inspection after construction of project components has been completed, the applicant's qualified archaeologists will submit reports to the District summarizing all monitoring and mitigation activities and confirming that all mitigation measures have been implemented.

Construction activities have the potential to impact unknown buried paleontological resources, which is considered a potentially significant impact. However, implementation of mitigation measures Cul-4 through Cul-8 will reduce effects associated with paleontological resources to below a level of significance.

Cul-4 Qualified Paleontological Consultants. The District will retain the services of qualified professional paleontological consultants with knowledge of the local paleontology and the minimum levels of experience and expertise as defined by the Society of Vertebrate Paleontology's Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (2010). The resumes and supporting information for each paleontological consultant will be submitted to the District for approval. At least one qualified paleontological consultant must be approved by the District prior to start of construction.

Cul-5 Paleontological Monitoring and Treatment Plan. Prior to start of construction, the District-approved paleontological consultant will submit a Paleontological Monitoring and Treatment Plan for each project component to the District for approval. This plan will be adapted from the Society of Vertebrate Paleontology's Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (2010) to specifically address each project component. In addition, the plan will, at minimum:

1. Include a list of personnel to which the plan applies.
2. Describe the criteria used to determine whether an encountered resource is significant and if it should be avoided or recovered.
3. Identify construction impact areas of moderate to high sensitivity for encountering paleontological resources and the shallowest depths at which those resources may be encountered.

4. Describe methods of recovery, preparation, and analysis of specimens; final curation of specimens at a federally accredited repository; data analysis; and reporting.
5. Identify areas where monitoring of earth-disturbing activities is required.
6. Briefly identify and describe the types of paleontological resources that may be encountered.
7. Identify the elements of a site that will lead to it requiring protection and mitigation and identify mitigation that will apply.
8. Describe monitoring procedures that will take place for each component of the project that requires monitoring.
9. Describe how often monitoring will occur (e.g., full time, part time, spot checking), as well as the circumstances under which monitoring will be increased or decreased.
10. Describe the circumstances that will result in the halting of work.
11. Describe the procedures for halting work and notification procedures for construction crews.
12. Include testing and evaluation procedures for resources encountered.
13. Describe procedures for curating any collected materials.
14. Outline coordination strategies to ensure that District-approved paleontological consultants conduct full-time monitoring of all grading activities in sediments determined to have a moderate to high sensitivity.
15. Include reporting procedures.
16. Include contact information for those to be notified or reported to.

For sediments of low or undetermined sensitivity, the plan will specify what level of monitoring is necessary. Sediments with no sensitivity will not require paleontological monitoring. The plan will define specific conditions in which monitoring of earthwork activities could be reduced and/or depth criteria established to trigger monitoring. These factors will be defined by the District-approved paleontologist.

Cul-6 Paleontology Construction Monitoring. Based on the Paleontological Monitoring and Treatment Plans, the District will conduct paleontological monitoring using District-approved paleontological monitors. This will include monitoring any ground-disturbing activity in areas determined to have high paleontological sensitivity and that have the potential to be shallow enough to be adversely affected by such earthwork as determined by the District-approved paleontological monitors.

Cul-7 Stop Work for Unanticipated Paleontological Discoveries. If previously unidentified paleontological resources are uncovered during implementation of the project, the District will ensure that ground-disturbing work is halted or diverted from the discovery to another location. A District-approved paleontological monitor will inspect the discovery and determine whether further investigation is required. If the discovery is significant but can be avoided, and no further effects will occur, the resource will be documented in the appropriate paleontological resource records and no further effort will be required. If the resource is significant but cannot be avoided and may be subject to further impact, the

District-approved paleontological monitor will evaluate the significance of the resource and implement appropriate measures in accordance with the Paleontological Monitoring and Treatment Plans.

- Cul-8 Cultural and Paleontological Resources Training Requirements.** Prior to start of construction, all construction personnel involved in ground-disturbing activities and the supervision of such activities will undergo worker environmental awareness training. The cultural and paleontological resources training components will be presented by a District-approved cultural resources consultant and District-approved paleontological consultant. The training will describe the role of cultural and paleontological resources monitors; role of tribal monitors (if applicable); the types of cultural and paleontological resources that may be found in the proposed project area and how to recognize such resources; the protocols to be followed if cultural or paleontological resources are found, including communication protocols; and the laws relevant to the protection of cultural and paleontological resources and the associated penalties for breaking these laws. Additionally, prior to construction, District-approved cultural and paleontological resources consultants will meet with the applicant's grading and excavation contractors to provide comments and suggestions concerning monitoring plans and to discuss excavation and grading plans.

Construction activities have the potential to impact unknown buried human remains, which is considered a potentially significant impact. However, implementation of mitigation measure Cul-9 will reduce effects associated with the inadvertent discovery of human remains to below a level of significance.

- Cul-9 Inadvertent Discovery of Human Remains.** If human remains are encountered during construction, the find will be handled in accordance with California Health and Safety Code Section 7050.5, which states that no further disturbance will occur until the County Coroner has made a determination of origin and disposition pursuant to California PRC Section 5097.98. The County Coroner must be notified of the find immediately. If the human remains are determined to be prehistoric, the Coroner will notify the NAHC, which will determine and notify an MLD. The MLD will complete the inspection of the site within 24 hours of notification, and may recommend scientific removal and nondestructive analysis of human remains and items associated with tribal burials.

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3.4 Environmental Justice

This section identifies environmental justice populations within the socioeconomic study area associated with Alternatives 1, 2, and 3, as defined and protected under EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*. This section discusses the likely effects of Alternatives 1, 2, or 3 on minority and low-income populations within the socioeconomic study area. For purposes of this discussion, the socioeconomic study area consists of Census Tracts (CTs) 100.14, 100.15, and 213.02 in the community of Otay Mesa. Demographic information is presented to offer a socioeconomic profile of the CTs around Alternatives 1, 2, and 3, including recognition of race/ethnicity and low-income populations in accordance with federal guidance. The demographic data presented in this section were generally derived from the 2009-2013 American Community Survey. Other demographic data described in this section rely largely on forecasts and other statistics prepared by SANDAG, which is the regional planning agency that develops annual demographic estimates and long-range forecasts for the region.

3.4.1 Environmental Setting/Affected Environment

3.4.1.1 Community Setting

Alternatives 1, 2, and 3 are located within CTs 100.14, 100.15, and 213.02 in the unincorporated community of Otay Mesa, in San Diego County. The southern halves of Alternatives 1, 2, and 3 are generally located in CT 100.15 and the northern halves, including Roll Reservoir, are located in CT 213.02. CT 100.14 borders CT 100.15 and is immediately adjacent to the portion of the pipeline alignment that will be located in Alta Road; as impacts could accrue to this population due to proximity, CT 100.14 was included in the socioeconomic study area.

As shown in Figure 3.4-1, CT 100.14 is located approximately 15 miles southeast of downtown San Diego and lies directly north of CT 100.15. CT 100.14 covers approximately 7,040 acres and its boundaries extend from I-805 to the east, I-905 to the south, Alta Road to the north, and west along the Otay River.

As shown in Figure 3.4-1, CT 100.15 is located approximately 18 miles southeast of downtown San Diego and directly north of the Mexican border. CT 100.15 covers approximately 9,900 acres and its boundaries extend from just east of I-805, north along Otay Mesa Road to the intersection of Alta Road and Otay Mountain Truck Trail, east to the Otay Mountain Truck Trail ridgeline of the San Ysidro Mountains, and south to the United States-Mexico border.

As shown in Figure 3.4-1, CT 213.02 is located approximately 23 miles southeast of downtown San Diego and directly north of CT 100.15. CT 213.02 covers approximately 2,284,514 acres and its boundaries include the United States-Mexico border to the south, the Lower Otay Reservoir to the west, the Loveland Reservoir to the north, and Barrett Lake to the east.

3.4.1.2 Environmental Justice Community Definition

The purpose of EO No. 12898 is to prevent federally funded projects from being disproportionately placed within low-income and/or minority communities. The EO also makes clear that its provisions apply fully to programs potentially affecting American Indian tribes. EO No. 12898 requires a consideration of “environmental justice” for communities that are primarily composed of minority and/or low-income residents or those geographies that contain a “meaningfully greater” proportion of minority and/or low-income residents than the surrounding population (i.e., a regional concentration).

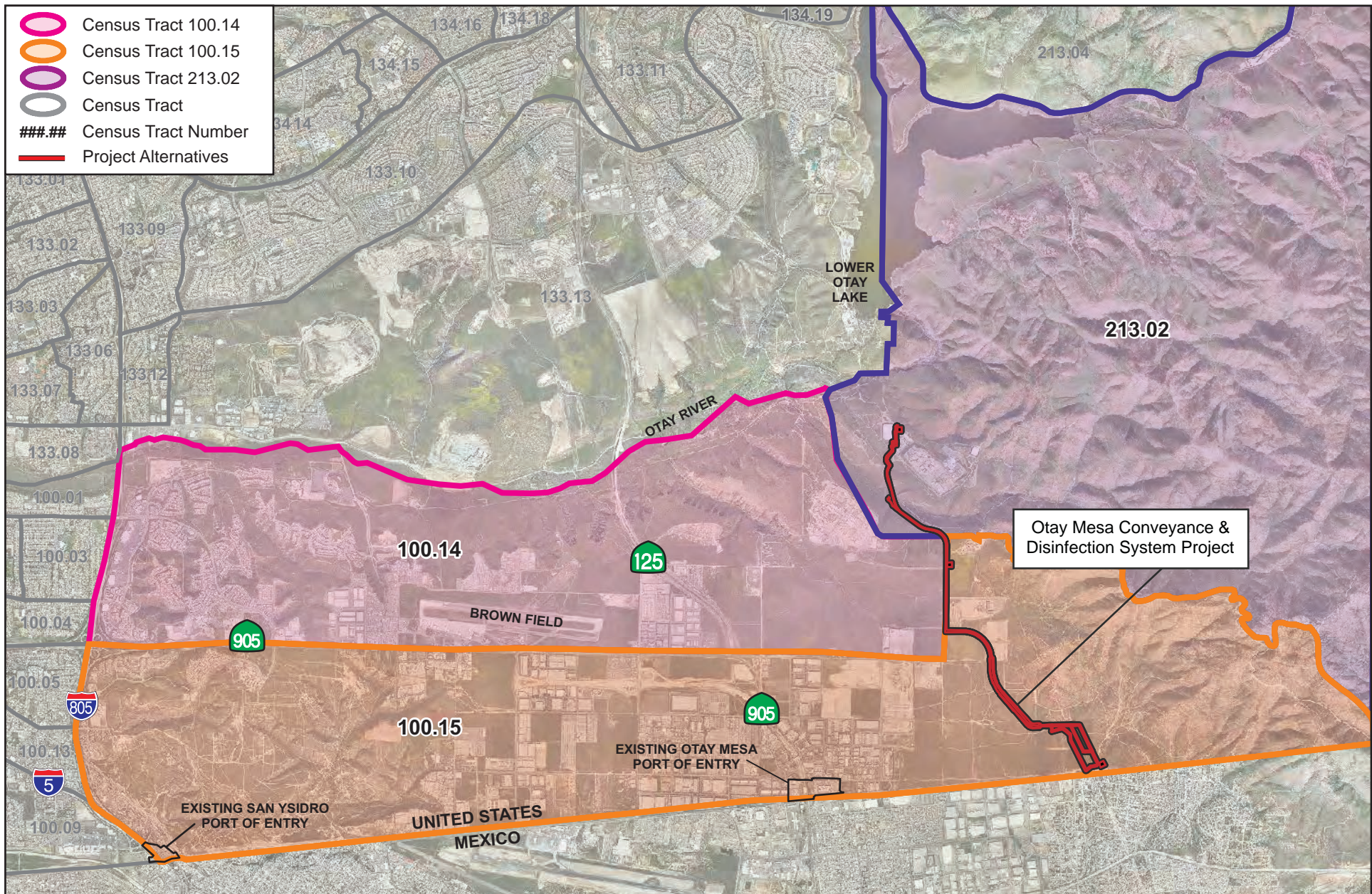
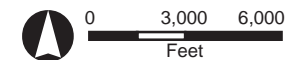


FIGURE 3.4-1
Socioeconomic Study Area: Census Tracts 100.14, 100.15, and 213.02

100032058

Source: USDOT, Caltrans 2010



Otay Mesa Conveyance and Disinfection System Project

Thus, geographies with minority and/or low-income populations that compose 50 percent or more of the total population are considered environmental justice populations. Additionally, while no formal guidance has been created identifying the thresholds to be used to define “meaningfully greater,” this analysis assumes that an environmental justice population would also exist in those geographies where the percent of the environmental justice population is 10 percent or more than the “reference” community (i.e., the County of San Diego).

3.4.1.3 Demographic Information

Table 3.4-1 presents a demographic profile of the socioeconomic study area (CTs 100.14, 100.15, and 213.02), the County of San Diego (for comparative purposes), and the State of California (for regional context).

In general, CT 100.15 includes a relatively small population of residents, where residents have a median age younger than the county-wide median by approximately six years, and are more likely to be Hispanic compared to any other CT in the socioeconomic study area. Spanish tends to be the dominant language spoken at home, while just 19.2 percent of residents speak primarily English at home. CT 100.15 has a slightly higher median household income than San Diego County, but an estimated 22.7 percent of residents earn below the poverty level, which is a rate higher than San Diego County and California as a whole. The percentage of those CT 100.15 residents with a high school graduate education or higher is 66.0 percent, which is lower than San Diego County and the other two CTs in the socioeconomic study area.

CT 100.14 has a larger population than both CTs 100.15 and 213.02. The population of CT 100.14 is more than six times greater than that of CT 100.15 and 60.7 percent of those residents in CT 100.14 are male. Homogenous CT 100.14 has the highest proportion of Black/African American and Asian residents compared to the other CTs in the socioeconomic study area. Homogenous CT 100.14 has a larger Hispanic population percentage than CT 213.02, the County of San Diego, and California. A wider range of languages are spoken at home than in the other CTs in the socioeconomic study area, with 46.7 percent of households speaking Spanish (or Spanish Creole) at home and 12.3 percent of households speaking an Asian/Pacific Island language at home. Approximately three-fourths of CT 100.14 residents have achieved a high school graduate education or higher. The residents in CT 100.14 have the highest median household income and the lowest percentage of residents below the poverty level of the three CTs in the socioeconomic study area.

The population of CT 213.02 is more than double that of CT 100.15, and the percentage of male residents in CT 213.02 is 67.9 percent. CT 213.02 has the highest percentage of white residents (79.4 percent) of all of the CTs in the socioeconomic study area. The CT also has the smallest percentage of Hispanic residents compared to the other CTs in the socioeconomic study area. English is the primary language spoken at home for 65.9 percent of households, with 30.4 percent of households speaking primarily Spanish (or Spanish Creole); of the three CTs in the socioeconomic study area, these percentages are most similar to San Diego County. Over three-fourths of CT 213.02 residents have a high school graduate level education or greater. However, the median household income of CT 213.02 residents is \$20,164, which is almost \$10,000 lower than San Diego County and is the lowest median household income of the three CTs in the socioeconomic study area. The percentage of residents with incomes below the poverty level is 19.2 percent, which is higher than San Diego County and the State of California as a whole.

Table 3.4-1 Population and Housing Characteristics of the Socioeconomic Study Area

Study Area	CT 100.14	CT 100.15	CT 213.02	County of San Diego	State of California
2013 Population	19,365	2,828	7,371	3,138,265	37,659,181
Gender					
Male	60.7%	47.0%	67.9%	50.2%	49.7%
Female	39.3%	53.0%	32.1%	49.8%	50.3%
Age Distribution					
Under 5 years	7.3%	8.3%	2.4%	6.6%	6.7%
5 to 17 Years	14.9%	26.7%	17.7%	16.5%	17.8%
18 to 24 Years	12.2%	9.3%	14.0%	11.7%	10.5%
25 to 44 Years	38.2%	30.3%	30.5%	28.9%	28.1%
45 to 54 Years	15.8%	12.4%	15.7%	13.6%	13.9%
55 to 64 Years	7.9%	5.9%	11.4%	10.9%	11.1%
65 to 74 Years	2.4%	5.0%	5.3%	6.2%	6.4%
75 Years and Over	1.3%	2.1%	3.2%	5.5%	5.4%
Median Age	32.4	29.1	36.2	34.8	35.4
Median Household Income	\$90,971	\$73,047	\$71,929	\$62,962	\$61,094
Percentage of Population Below Poverty Level	5.8%	22.7%	19.2%	14.4%	15.9%
Population 25+ Years Educational Attainment					
High School Graduate or Higher	74.6%	66.0%	75.5%	85.5%	81.2%
Bachelor's Degree or Higher	17.9%	20.6%	15.6%	34.6%	30.6%
Population by Race and Ethnicity					
White	58.8%	69.2%	79.4%	71.4%	62.3%
Black or African American	12.2%	8.2%	10.9%	5.1%	6.0%
American Indian and Alaska Native	1.5%	0.0%	0.7%	0.7%	0.8%
Asian	17.8%	5.7%	2.6%	11.1%	13.3%
Native Hawaiian and Other Pacific Islander	0.0%	0.8%	0.3%	0.5%	0.4%
Some Other Race and Two or More Races	9.8%	16.1%	6.1%	11.3%	17.2%
Hispanic or Latino Origin (any race) ⁽¹⁾	53.2%	81.5%	36.1%	32.4%	37.9%
White alone, not Hispanic or Latino	15.3%	1.7%	49.5%	48.0%	39.7%
Total Minority	84.7%	98.3%	50.5%	52.0%	60.3%
Language Spoken at Home					
English only	37.0%	19.2%	65.9%	62.6%	56.3%
Spanish (or Spanish Creole)	46.7%	74.3%	30.4%	24.7%	28.8%
Other Indo-European Languages	1.0%	0.0%	1.8%	3.1%	4.4%
Asian/Pacific Island Language	12.3%	6.5%	1.3%	7.9%	9.6%
Other Languages	2.9%	0.0%	0.6%	1.6%	0.9%
2013 Total Housing Units	3,926	691	1,474	1,169,496	13,726,869
Total Occupied Units	3,835	607	1,420	1,076,483	12,542,460
Owner-Occupied Housing	63.4%	68.5%	74.9%	53.8%	55.3%
Renter-Occupied	36.6%	31.5%	25.1%	45.9%	44.7%
Total Civilian Employment (16 years and over)	7,092	1,053	1,940	1,390,197	16,635,854
Unemployment Rate (16 years and over)	6.8%	12.0%	9.1%	10.0%	11.5%
Occupation					
Management, professional, related occupations	32.6%	32.4%	33.8%	40.1%	36.9%
Service occupations	22.5%	23.4%	13.7%	19.4%	18.6%
Sales and office occupations	32.1%	26.8%	28.6%	24.5%	24.4%
Construction, extraction, and maintenance	5.6%	4.5%	16.4%	7.9%	9.2%
Production, transportation, and material	7.2%	13.0%	7.6%	8.1%	10.9%

⁽¹⁾ Hispanic or Latino is an ethnicity, not a race. This ethnicity is not included in the total population as one or more races of the total population may originate from Hispanic or Latino ethnicity.

Sources: 2009-2013 American Community Survey

Population

Based on the 2013 population estimates from the U.S. Census Bureau, there are 19,365 residents in CT 100.14 and 2,828 residents in CT 100.15, which are both more than double the 2000 Census population of 8,314 residents and 1,062 residents for the same areas, respectively. There are 7,371 residents in CT 213.02, which is approximately 1.75 times greater than the 2000 Census population of 4,412 residents for the same area. CT 100.14 represents 0.6 percent of the countywide population of 3,138,265. CT 100.15 represents 0.1 percent, and CT 213.02 represents approximately 0.2 percent, while the County of San Diego represents approximately 8.3 percent of the population of California. Based on the 2009-2013 American Community Survey, residents in CT 100.14 have a median age of 32.4. Residents in CT 100.15 are younger with a median age of 29.1, and residents of CT 213.02 are slightly older with a median age of 36.2. The countywide median age for residents is 34.8.

Race and Ethnicity of Population

The following races are considered a racial minority: African American, American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, and people who self-identify as “Some Other Race” or “Two or More Races.” Hispanic and/or Latino are considered an ethnic minority, but can be of any race (including White). Table 3.4-1 presents the racial and ethnicity make-up of the residential population in the socioeconomic study area as well as the County of San Diego and California.

According to the 2009-2013 American Community Survey, residents in CT 100.14 were 53.2 percent Hispanic (compared to 32.4 percent Hispanic in San Diego County overall), and 15.3 percent White and Non-Hispanic (compared to 48.0 percent in San Diego County). Based on the census data, CT 100.14 is considered an environmental justice community as the total minority racial and ethnic population is greater than 50 percent of the population at 84.7 percent.

As shown in Table 3.4-1, CT 100.15 has the highest minority percentage population of all CTs in the socioeconomic study area. According to the 2009-2013 American Community Survey, residents in CT 100.15 were 81.5 percent Hispanic (compared to 32.4 percent Hispanic in San Diego County overall), and 1.7 percent White and Non-Hispanic (compared to 48.0 percent in San Diego County). Based on the census data, CT 100.15 is considered an environmental justice community as the total racial and ethnic population is greater than 50 percent of the population at 98.3 percent.

Also shown in Table 3.4-1, the proportion of racial and ethnic minorities in CT 213.02 is the lowest compared to the other CTs in the socioeconomic study area. According to the 2009-2013 American Community Survey, residents in CT 213.02 were 36.1 percent Hispanic (compared to 32.4 percent Hispanic in San Diego County overall), and 49.5 percent White and Non-Hispanic (compared to 48.0 percent in San Diego County). Based on the census data, CT 213.02 is considered an environmental justice community since the total racial and ethnic population is greater than 50 percent of the population at 50.5 percent.

Household Income and Poverty

According to the 2009-2013 American Community Survey (Table 3.4-1), the estimated median household income for CT 100.14 was \$90,971, which was greater than the County of San Diego estimated median household income of \$62,962. Approximately 5.8 percent of the population in CT 100.14 is living in poverty, which is lower than the County of San Diego (14.4 percent) and lower than California as a whole (15.9 percent). Thus, the residents of CT 100.14 are not considered a low-income or impoverished population as the percentage of persons living in poverty is less than 50 percent of the

total CT population and the proportion is less than 10 percentage points higher than the County of San Diego and California overall.

According to the 2009-2013 American Community Survey (Table 3.4-1), the estimated median household income for CT 100.15 was \$73,047, which was higher than the County of San Diego estimated median household income of \$62,962. Approximately 22.7 percent of the population in CT 100.15 is living in poverty, which is higher than both the County of San Diego (14.4 percent) and California (15.9 percent). However, the residents of CT 100.15 are not considered a low-income or impoverished population as the percentage of persons living in poverty is less than 50 percent of the total CT population and the proportion is less than ten percentage points higher than the County of San Diego and California overall.

According to the 2009-2013 American Community Survey (Table 3.4-1), the estimated median household income for CT 213.02 was \$71,929, which is higher than the County of San Diego estimated median household income of \$62,962. Approximately 19.2 percent of the population of CT 213.02 is living in poverty, which is higher than the County of San Diego (14.4 percent) and California (15.9 percent) overall. However, the residents in CT 213.02 are not considered a low-income or impoverished population as the percentage of persons living in poverty is less than 50 percent of the CT total population and the proportion is less than ten percentage points higher than the County of San Diego and California overall.

3.4.2 Regulatory Setting

3.4.2.1 Federal Regulations and Standards

National Environmental Policy Act (42 U.S.C. Section 4321 *et seq.*)

NEPA analyses consider potential environmental effects, including potential effects to socioeconomic and environmental justice resources, in the evaluation of any proposed federal agency action. General NEPA procedures are set forth in CEQ Regulations 23 CFR 771.

Federal Executive Order 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

All projects involving a federal action (funding, permit, or land) must comply with EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which states that “each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations” (EO 12898, Sections 1–101), signed by President Clinton on February 11, 1994. This EO directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services (HHS) poverty guidelines. The 2015 poverty guidelines established a poverty threshold of \$24,250 total household income for a family of four nationwide.

Federal Executive Order 13045 – Protection of Children from Environmental Health Risks and Safety Risks

Federal agencies are directed, as appropriate and consistent with the agency's mission, to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children. Agencies are encouraged to participate in the implementation of this order by ensuring that their policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.

3.4.2.2 State Regulations and Standards

CEQA (PRC Section 21000 *et seq.*) and CEQA Guidelines (Title 14 CCR Section 15000 *et seq.*)

CEQA requires state and local agencies to identify the significant environmental effects of their actions, including potential significant effects on established communities, and to avoid or mitigate those effects when feasible. Pursuant to CEQA Guidelines Section 15131(b), economic and social effects of a project that are not related to physical changes in the environment are not treated as a significant impact on the environment but may be used to evaluate the significance of physical change that is caused by the project.

California Government Code Section 65040.12(e)

California Government Code Section 65040.12(e) defines environmental justice as “the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies.” This code establishes guidelines for the promotion, evaluation, and adoption of methods, plans, and programs to decrease the opportunities for disproportional effects to fall on low-income or minority communities through more effective planning efforts.

3.4.3 Thresholds of Significance

3.4.3.1 CEQA Significance Criteria

Significance thresholds or standards for environmental justice effects are not generally provided under CEQA Guidelines Section 15131. CEQA does not address environmental justice effects unless it can be demonstrated that a physical effect on the environment will result.

3.4.3.2 NEPA Considerations

The Department considers the effects of the proposed action on the human environment consistent with NEPA, and, considers the effects on minority populations and low-income populations as described in EO 12898. To determine if the project will result in effects on minority and/or low-income populations, a five-step method is used based on guidance provided by CEQ, the EPA, and the Federal Highway Administration (FHWA; FHWA Order 6640.23). Steps 1 through 4 determine the characteristics of the affected population. Step 5 determines the criteria utilized to determine if the affected populations will be disproportionately affected. The five steps are as follows:

- 1) **Identify Potential Effects** — A broad range of project-related potential environmental and human health effects have been evaluated. These include effects related to air quality, biological

resources, cultural resources, geology/soils, greenhouse gas emissions, hydrology and water quality, noise and vibration, transportation, and hazardous materials.

- 2) **Determine the Affected Geographical Area** — The geographical area potentially affected by the project includes CT 100.14, CT 100.15, and CT 213.02, defined above as the “socioeconomic study area.”
- 3) **Determine the Demographic Character of the Affected Geographic Area** — For the affected geographic area, the demographic characteristics are determined. These include the following:
 - Total population (including age distribution)
 - Percent of population of racial minority status in the affected area (socioeconomic study area)
 - Percent of population of racial minority status in comparison geography (San Diego County)
 - Percent of population of low-income status in the affected area (socioeconomic study area)
 - Percent of population of low-income status (San Diego County)
- 4) **Determine if the Affected Populations Include Environmental Justice Communities** — The affected populations are those populations within the affected geographic area. An environmental justice community is identified if any of the following conditions apply:
 - At least one-half of the population is of racial minority status
 - The percentage of the population that is of racial minority status is at least 10 percentage points higher than that for San Diego County
 - At least one-half of the population is of low-income minority status
 - The percentage of the population that is of low-income status is at least 10 percentage points higher than that for San Diego County
- 5) **Determine Whether the Adverse Effects of the Project Would Disproportionately Affect Environmental Justice Communities** — An environmental justice impact will occur if a significant and adverse effect accrues disproportionately to an environmental justice population. Disproportionality is determined in those instances when an adverse and significant effect is predominantly borne, more severe, or is of a greater magnitude in areas with environmental justice populations than in other areas.

3.4.4 Applicable Regulatory Measures

As described in Section 3.1.4, implementation of the District’s WRMP, as identified in the WRMP PEIR, includes PDFs and SCPs to reduce potential environmental effects associated with environmental topics that result from District projects. There are no identified PDFs and SCPs related to environmental justice in the PEIR prepared for the WRMP.

3.4.5 Environmental Effects

3.4.5.1 Alternatives 1, 2, and 3

Issue 1: Disproportionate Effects on a Community

Would implementation of Alternatives 1, 2, or 3, or associated facilities result in disproportionate effects on an environmental justice community as defined by Executive Order No. 12898?

Alternatives 1, 2, and 3 and associated above-ground facilities will be located throughout CTs 100.14, 100.15, and 213.02, where construction and operation activities could cause potential environmental effects to environmental justice communities within the socioeconomic study area. As discussed above, all of the CTs qualify as environmental justice communities due to minority populations that represent more than 50 percent of the total population. Therefore, the following analysis pertains to CTs 100.14, 100.15, and 213.02 and would include all significant and adverse impacts to human health and safety associated with the proposed project alternatives.

However, implementation of Alternatives 1, 2, or 3 will not result in significant and adverse effects to human health and safety; thus, impacts cannot accrue to any population, including environmental justice populations. Construction effects will be restricted to the approximately 9- to 10-month construction period along the proposed pipeline route and at the associated facilities locations, where effects will diminish once construction activities end. Construction of Alternatives 1, 2, or 3 will occur partially in an undeveloped area and partially within existing roadways. There are no existing residential uses within the immediate project area and no residential land uses are proposed for the project area in the future (County of San Diego 2010). Since construction activities will not be located within proximity of residential uses and construction will be limited to 9 to 10 months in total, the proposed project will have minimal effects on the overall population of the socioeconomic study area. Further, due to the nature of the proposed project, there are no disproportionate effects that will affect specific localized populations of the socioeconomic study area as temporary construction effects will be dispersed along the pipeline alignment and not concentrated in one area.

Future operation and maintenance activities associated with the proposed project will generally occur within existing or constructed roadways. Once the proposed pipeline is constructed, it will be located entirely underground and will not affect residents of the socioeconomic study area. Operation and maintenance activities will occur at the above-ground facilities (air relief valves, pressure relief valves, potential pump station, disinfection facility, meter station, and outfall structure) and occasionally at the pipeline itself. Maintenance activities include routine maintenance trips to the above-ground facilities, chemical supply deliveries from vendors, and bimonthly landscaping. As discussed in Section 3.1, Air Quality, and Section 3.7, Hazards and Hazardous Materials, operational effects associated with air pollutant emissions and routine transport, use, or disposal of hazardous materials will be less than significant. Further, according to the Otay Community Planning Area Land Use Map of the San Diego County General Plan, no residential land uses are designated for the portion of the socioeconomic study area located in San Diego County in the vicinity of the proposed project (County of San Diego 2012). All environmental effects resulting from implementation of the proposed project will be mitigated to a less than significant level as described in Section 3.1 through Section 3.10 of this Draft EIR/EIS. Therefore, no environmental effects will be disproportionately borne by minority populations in the three socioeconomic study area CTs.

No adverse or disproportionate effects on environmental justice populations will result from construction and operation of Alternatives 1, 2, or 3. In addition, CTs 100.14, 100.15, and 213.02 are located within the District's service area, where the proposed project will be beneficial to the residents of the census tracts as the proposed project will convey a new source of potable water to the District's facilities and provide a new long-term water source for the District to continue to serve its service area as well as the overall region. In summary, effects to environmental justice communities from implementation of Alternatives 1, 2, or 3, and associated above-ground facilities will be less than significant.

3.4.5.2 No Action Alternative

Under the No Action Alternative, no construction, including pipelines or related infrastructure, will occur and the project area will remain in its current condition. Therefore, the No Action – No Project will not result in any effects related to the disproportionate effect on an environmental justice community because no construction and/or operations will occur.

3.4.6 Mitigation Measures

Implementation of the proposed project will not result in disproportionate effects on an environmental justice community within the project area. No mitigation measures are required.

3.5 Geology/Soils

This section analyzes the affected environment of Alternatives 1, 2, and 3, and associated facilities pertaining to regional geology, soil characteristics, and geologic hazards. The information presented in this section is based on the Preliminary Geotechnical Evaluation (Geocon 2015a).

3.5.1 Environmental Setting/Affected Environment

3.5.1.1 Regional Geology

The proposed project is situated in the coastal foothill section of the Peninsular Ranges Geomorphic Province. The province encompasses an area that extends approximately 900 miles from the Transverse Ranges and the Los Angeles Basin south to the southern tip of Baja California. The province varies in width from approximately 30 to 100 miles. In general, the province consists of rugged mountains underlain by Jurassic metavolcanic and metasedimentary rocks, and Cretaceous igneous rocks of the southern California batholith.

The Peninsular Ranges Province is traversed by a group of sub-parallel faults and fault zones trending roughly northwest. Several of these faults are considered active. The Elsinore, San Jacinto, and San Andreas Faults are active fault systems located northeast of the project area and the Rose Canyon, Coronado Bank, San Diego Trough, and San Clemente Faults are active faults located west of the project area. Major tectonic activity associated with these and other faults within the regional tectonic framework consists primarily of right-lateral, strike-slip movement. Specifics of faulting are discussed in the following sections.

Topographically, the Peninsular Ranges Province is composed of generally parallel ranges of steep sloping hills and mountains separated by alluvial valleys. More recent uplift and erosion have produced the characteristic canyon and mesa topography present today in western San Diego County, as well as the deposition of surficial materials, including Quaternary (less than 2 million years old) alluvium, colluvium, and topsoil.

3.5.1.2 Soils and Geologic Formations

The topography of the proposed project area and adjacent areas generally consists of low relief hills with drainage and canyons, including O'Neal Canyon. The lowest and highest surface elevations of the proposed project area are across O'Neal Canyon at approximately 400 feet above mean sea level (MSL) near the base of the drainage, and 700 feet above MSL at the southern rim of the canyon. Elevations gradually decrease to approximately 520 feet above MSL near the United States-Mexico border. In addition to O'Neal Canyon, unnamed drainages exist across or near the proposed pipeline alignments.

In general, the proposed pipeline alignments are underlain by fill, topsoil, alluvium, Terrace Deposits, Otay Formation, Unnamed Fanglomerate Deposits, and Santiago Peak Volcanics. These soils and geologic formations are based upon the Preliminary Geotechnical Evaluation (Geocon 2015a) and Phase I ESA (Geocon 2015b) and are described below in order of increasing age.

Fill

Soil observed in the northern portion of the proposed project area is primarily fill. The fill soil ranged from miscellaneous undocumented fill to compacted fill likely derived locally during previous

construction. Surficial deposits consisting of large cobble- to boulder-size rock mixed with soil are possible on the project area where rocks were dumped following removal from the nearby agricultural fields.

Topsoil

Topsoil blankets the project area and typically consists of loose, unconsolidated, clayey sands and soft sandy clays. In general, the topsoil is not expected to exceed 4 feet in thickness with an average thickness of about 2 feet. Topsoil is generally highly expansive.

Alluvium

Alluvial deposits are typically observed in drainage bottoms with varying thickness, and were encountered within the natural drainages along Alta Road (Geocon 2015b). The alluvial soils are characterized as soft to stiff, silty and sandy clay with zones of loose, clayey sand. Alluvial soils have a highly expansive nature.

Terrace Deposits

Quaternary-age Terrace Deposits were encountered along Alta Road just north of Paseo de la Fuente (Geocon 2015b). This geologic unit is typically characterized as dense, moist, reddish brown, clayey, fine to very coarse sand with abundant gravels, cobbles, and occasional rocks up to 12 inches in dimension.

Otay Formation

The proposed pipeline alignments are predominantly underlain by the Tertiary-age Otay Formation. The Otay Formation primarily consists of medium dense to dense, silty, and fine to medium slightly cemented sandstone with siltstone and claystone interbeds. Layers of Unnamed Fanglomerate may interfinger with the Otay Formation. The unweathered Otay Formation exhibits low to medium expansion potential.

Unnamed Fanglomerate Deposits

Late Tertiary- to Pleistocene-age Unnamed Fanglomerate Deposits are typically located throughout the northern portion of the project area and are estimated to be in excess of 20 to 30 feet thick. This unit consists of very dense, slightly cemented, clayey sandstone containing up to 30 to 50 percent sub-angular gravels, cobbles and boulders up to approximately 2 feet in diameter.

Santiago Peak Volcanics

Outcrops of the Jurassic-age Santiago Peak Volcanics were observed in portions of the project area. This formation is composed of slightly metamorphosed, moderately to highly jointed volcanic rock.

3.5.1.3 Groundwater

Regional groundwater levels are expected to be in excess of 100 feet below site grade. Drainages in the project area periodically contain perched groundwater associated with rainfall. It is not uncommon for groundwater or seepage conditions to develop where none previously existed. Groundwater elevations are dependent on seasonal precipitation, irrigation, and land use, among other factors, and vary as a result.

3.5.1.4 Geologic Hazards

The following discussion is an assessment of the existing setting pertaining to potential geologic hazards including faulting and seismicity, liquefaction, landslides, seiches and tsunamis, subsidence and seismic settlement, and expansive soils.

Faulting and Seismicity

Like all of southern California, the proposed project would be subject to ground shaking. However, there are no designated Alquist-Priolo Earthquake fault zones within the vicinity of the project area. Based on the Preliminary Geotechnical Evaluation (Geocon 2015a) assessment of the soil and geologic conditions in the general area, there are no known active, potentially active, or inactive faults located in the project area. The proposed project area is not mapped in the vicinity of geologic hazards such as landslides, liquefaction areas, or faulting and is not located within a Special Studies Fault Zone or State of California Earthquake Fault Zone (County of San Diego 2009a).

According to the 2008 USGS fault database, six known active faults are located within a search radius of 50 miles from the property. The nearest known active faults are the Newport-Inglewood and Rose Canyon Faults, which are located approximately 13 to 15 miles west of the project area and are the dominant source of potential ground motion. Earthquakes that might occur on the Newport-Inglewood and Rose Canyon Faults or other faults within the southern California and northern Baja California, Mexico area are potential generators of significant ground motion at the project area. The estimated maximum earthquake magnitude and peak ground acceleration for the Newport-Inglewood and Rose Canyon Faults are 7.5 and 0.21g, and 6.9 and 0.17g, respectively. Table 3.5-1 lists the estimated maximum earthquake magnitude and peak ground acceleration for the most dominant faults in relationship to the proposed project location.

Fault Name	Distance from Project Area (miles)	Maximum Earthquake Magnitude (Mw)	Peak Ground Acceleration Boore-Atkinson 2008 (g)
Newport-Inglewood	13 – 15	7.5	0.20 – 0.21
Rose Canyon	13 – 15	6.9	0.16 – 0.17
Coronado Bank	19 – 21	7.4	0.15 – 0.16
Palos Verdes Connected	19 – 21	7.7	0.17 – 0.18
Elsinore	39 – 41	7.9	0.11
Earthquake Valley	44 – 46	6.8	0.06

Mw = moment magnitude, g = acceleration of gravity
Source: Geocon 2015a

Liquefaction

Liquefaction typically occurs during seismic shaking in relatively loose, cohesionless soil that exists below the groundwater surface. Under these conditions, a seismic event could result in a rapid water pressure increase in the groundwater from the earthquake-generated ground accelerations. Primary factors controlling the development of liquefaction include intensity and duration of ground accelerations, characteristics of the subsurface soil, in situ stress conditions, and depth to groundwater. The potential for liquefaction in the project area is considered low due to the presence of shallow dense formational materials and the lack of permanent, near-surface groundwater.

Landslides

Landslides are the down-slope movement of soil and rock under the direct influence of gravity, and commonly occur in connection with other major natural disasters such as earthquakes, wildfires, and floods (USGS 2013). The Preliminary Geotechnical Evaluation (Geocon 2015a) did not encounter previous landslides during the project reconnaissance and none are known to exist in the project area or in the surrounding area.

Seiches and Tsunamis

Seiches are caused by the movement of an inland body of water due to the movement from seismic forces, and tsunamis are large sea waves caused by submarine earthquakes or volcano eruptions. The potential for seiches to occur is considered very low due to the topography and approximate distance of 1 mile between the project area and Lower Otay Reservoir, which is the nearest inland body of water. The potential of tsunamis to occur at the project area is considered very low due to the relatively large distance of approximately 12 miles from the coastline to the project area.

Subsidence and Seismic Settlement

Subsidence is the settling, compaction, or caving in of land caused by subsurface mining, groundwater withdrawal, pumping of oil and gas, or seismic forces (USGS 2013). Based on the subsurface conditions below the project area, the proposed project is not expected to be subject to hazards from ground subsidence or seismic settlement.

Expansive Soil

Certain types of clay soils expand when they are saturated and shrink when dried (County of San Diego 2007c). The shrinking and swelling of expansive soils in response to changes in moisture content commonly result in serious cracking of structures (USDA 2004). The clayey soils of the Otay Formation typically exhibit low to high expansion potential, and may become unstable over time. Other surficial soils including fill, alluvium, and terrace deposits may exhibit varying degrees of expansion potential.

3.5.2 Regulatory Setting

3.5.2.1 Federal Regulations and Standards

Federal Uniform Building Code

The Uniform Building Code (UBC) published by the International Conference of Building Officials forms the basis for about half the state building codes in the United States, including California's. The UBC has been adopted by the state legislature together with additions, amendments, and repeals to address the specific building conditions and structural requirements in California. The UBC is the primary means for authorizing and enforcing procedures and mechanisms to ensure safe building standards. The UBC uses a hazard classification system to determine what protective measures are required to protect human health and property. To ensure that these safety measures are met, the UBC employs a permit system based on hazard classification.

3.5.2.2 State Regulations and Standards

California Geologic Survey

The California Geologic Survey (CGS) provides guidance with regard to seismic hazards. The CGS's *Special Publications 117A, Guidelines for Evaluating and Mitigating Seismic Hazards in California* (CGS 2008) provides guidance for evaluation and mitigation of earthquake-related hazards for projects within designated zones of required investigation.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 (formerly the Special Studies Zoning Act) regulates development and construction of buildings intended for human occupancy to avoid the hazard of surface fault rupture. The Act helps define areas where fault rupture is most likely to occur. The Act groups faults into categories of active, potentially active, and inactive. Historic and Holocene age faults are considered active, Late Quaternary and Quaternary age faults are considered potentially active, and pre-Quaternary age faults are considered inactive. These classifications are qualified by the conditions that a fault must be shown to be sufficiently active and well defined by detailed site-specific geologic explorations in order to determine whether building setbacks should be established.

California Seismic Hazards Mapping Act

The California Seismic Hazards Mapping Act (PRC Division 2, Chapter 7.8, Section 2690 *et seq.*) provides a statewide seismic hazard mapping and technical advisory program to assist local governments in protecting public health and safety relative to seismic hazards. The act provides direction and funding for the State Geologist to compile seismic hazard maps and to make those maps available to local governments. The Act, along with related standards in the Seismic Hazards Mapping Regulations (CCR Title 14, Division 2, Chapter 8, Article 10, Section 3270 *et seq.*), also directs local governments to require the completion and review of appropriate geotechnical studies prior to approving development projects. These requirements are implemented on a local level through means such as general plan directives and regulatory ordinances.

California Building Code

CCR Title 24, Part 2, the California Building Code (CBC), provides minimum standards for building design. Local codes are permitted to be more restrictive than Title 24, but are required to be no less restrictive. Chapter 16 of the CBC deals with general design requirements, including but not limited to regulations governing seismically resistant construction (Chapter 16, Division IV) and construction to protect people and property from hazards associated with excavation cave-ins and falling debris or construction materials. Chapters 18 and A33 address site demolition, excavations, foundations, retaining walls, and grading, including but not limited to requirements for seismically resistant design, foundation investigations, stable cut and fill slopes, and drainage erosion control.

3.5.2.3 Local Regulations and Standards

San Diego County General Plan Seismic Safety Element

The San Diego County General Plan Seismic Safety Element is intended to identify and evaluate seismic hazards in the County, and to provide policies to reduce the loss of life and property damage related to seismic hazards. Associated policies in the Seismic Safety Element applicable to the proposed project include requirements for submittal and approval of appropriate geotechnical investigations, as well as

conformance with applicable laws and standards such as the referenced Geologic Hazard Guidelines, the Alquist-Priolo Act (for Fault-Rupture Hazard Zones), and the CBC (County of San Diego 2011a).

San Diego County Grading Ordinance

The County Grading Ordinance includes requirements for the maximum slope allowed for cut and fill slopes and the requirement for drainage terraces on cut or fill slopes exceeding 40 feet in height. The ordinance also includes expansive soil requirements for cuts and fills and minimum setback requirements for buildings from cut or fill slopes. In addition, the ordinance includes reporting requirements, such as a soil engineer's report and a final engineering geology report by an engineering geologist, which include specific approval of the grading as affected by geological factors.

3.5.3 Thresholds of Significance

3.5.3.1 CEQA Significance Criteria

Thresholds used to evaluate potential geological effects are based on applicable criteria in Appendix G of the CEQA Guidelines. A significant geology/soils impact occurs if the proposed project would:

- 1) Expose people or structures to potential substantial adverse effects, including the risk of loss, or injury, or death involving:
 - a) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;
 - b) Strong seismic ground shaking;
 - c) Seismic-related ground failure, including liquefaction; or
 - d) Landslides.
- 2) Result in substantial soil erosion or the loss of topsoil.
- 3) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the proposed project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.
- 4) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1997), creating substantial risks to life or property.

3.5.3.2 NEPA Considerations

There are no federal significance criteria established for geology and soil effects. The Department evaluates the proposed action's environmental effects consistent with NEPA. For the purposes of this analysis, the CEQA significance criteria discussed above will be used for NEPA considerations as well.

3.5.4 Applicable Regulatory Measures

As described in Section 3.1.4, implementation of the District's WRMP, as identified in the WRMP PEIR, includes PDFs and SCPs to reduce potential environmental effects on geology and soils from District projects. The following PDFs and SCPs are relevant to the proposed project:

- Geo-PDF-1 At the time of CIP project design, the District will implement the relevant requirements of the 2006 UBC and 2007 CBC, as updated or amended, and California Division of Mines & Geology (CDMG) Special Publications 117.
- Geo-SCP-1 Prior to construction of CIP projects, areas of liquefaction and/or landslides will be identified as part of site-specific geotechnical investigations. The investigations will specifically address foundation and slope stability in liquefiable and landslide areas proposed for construction. Recommendations made in conjunction with the geotechnical investigations will be implemented during construction, including but not limited to the following actions:
- Over-excavate unsuitable materials and replace them with engineered fill.
 - For thinner deposits, remove loose, unconsolidated soils and replace with properly compacted fill soils, or apply other design stabilization features (i.e., excavation of overburden).
 - For thicker deposits, implement applicable techniques such as dynamic compaction (i.e., dropping heavy weights on the land surface), vibro-compaction (i.e., inserting a vibratory device into the liquefiable sand), vibro-replacement (i.e., replacing sand by drilling and then vibro-compacting backfill in the bore hole), or compaction piles (i.e., driving piles and densifying surrounding soil).
 - Lower the groundwater table to below the level of liquefiable soils.
 - Perform in-situ densification of soils or other alterations to the ground characteristics.
 - For landslides, implement applicable techniques such as stabilization (i.e., construction of buttress fills, retaining walls, or other structural support to remediate the potential for instability of cut slopes composed of landslide debris); remedial grading and removal of landslide debris (e.g., over-excavation and recompaction); or avoidance (e.g., structural setbacks).
- Geo-SCP-2 Prior to construction of CIP projects, areas of severely erodible soils will be identified as part of site-specific geotechnical investigations. The investigations will specifically address foundation and slope stability in erodible soils proposed for construction. Recommendations made in conjunction with the geotechnical investigations will be implemented during construction, including but not limited to the following actions:
- Minimize disturbance to existing vegetation and slopes.
 - Construct drainage control devices (e.g., storm drains, brow ditches, subdrains, etc.) to direct surface water runoff away from slopes and other graded areas.
 - Provide temporary hydroseeding of cleared vegetation and graded slopes as soon as possible following grading activities for areas that will remain in disturbed condition (but will not be subject to further construction activities) for a period greater than 2 weeks during the construction phase.
- Geo-SCP-3 The construction bid documents for each CIP project will include either a 90 percent Erosion Control Plan (for projects that would result in less than one acre of land disturbance) or a 90 percent SWPPP (for projects that would result in one acre or

greater of land disturbance). The Erosion Control Plan will comply with the storm water regulations or ordinances of the local agency jurisdiction within which the CIP project occurs, while the SWPPP will comply with the NPDES General Construction Permit. These plans will be based on site-specific hydraulic and hydrologic characteristics, and identify a range of BMPs to reduce effects related to storm water runoff, including sedimentation BMPs to control soil erosion. The construction contractor will identify the specific storm water BMPs to be implemented during the construction phase of a given CIP project, and will prepare and implement the final Erosion Control Plan or SWPPP for that project. Typical BMPs to be implemented as part of the Erosion Control Plan or SWPPP may include, but not be limited to, the actions listed below. For protection of finished graded areas and manufactured slopes, the construction contractor will implement the District Standard Specifications for Slope Protection and Erosion Control (Section 02202).

- Implement a “weather triggered” action plan during the rainy season involving installation of enhanced erosion and sediment control measures prior to predicted storm events (i.e., 40 percent or greater chance of rain).
- Use erosion control/stabilizing measures in cleared areas and on graded slopes of 3:1 (horizontal to vertical) gradient or steeper, such as geotextiles, mats, fiber rolls, soil binders, or temporary hydroseeding.
- Divert runoff from uphill areas around disturbed areas of the construction site.
- Protect storm drain inlets on the site or downstream of the construction site to eliminate entry of sediment.
- Store BMP materials in on-site areas to provide “standby” capacity adequate to provide complete protection of exposed areas and prevent off-site sediment transport.
- Train personnel responsible for BMP installation and maintenance.
- Implement solid waste management efforts such as proper containment and disposal of construction debris.
- Install permanent landscaping (or native vegetation in areas adjacent to natural habitats) and irrigation as soon as feasible after final grading or construction.
- Implement appropriate monitoring and maintenance efforts (e.g., prior to and after storm events) to ensure proper BMP function and efficiency.
- Implement sampling/analysis, monitoring/reporting, and post-construction management programs per NPDES requirements.
- Implement additional BMPs as necessary (and as required by appropriate regulatory agencies) to ensure adequate erosion and sediment control.

Geo-SCP-4 Prior to construction of CIP projects, areas of geologic/soil instability will be identified as part of site-specific geotechnical investigations. The investigations will specifically address foundation and slope stability within unstable geologic units/soils proposed for construction. Recommendations made in conjunction with the geotechnical investigations will be implemented during construction, including but not limited to the following actions:

- Perform site-specific settlement analyses in areas deemed appropriate by the geotechnical engineer and evaluate the potential for groundwater-related subsidence.
- Over-excavate unsuitable materials and replace them with engineered fill.
- To minimize or avoid lateral spreading of on-site soils, remove compressible soils and replace them with properly compacted fill, perform compaction grouting or deep dynamic compaction, or use stiffened conventional foundation systems.
- To minimize or avoid differential compression or settlement of on-site soils, manage oversized material (i.e., rocks greater than 12 inches) via off-site disposal, placement in non-structural fill, or crushing or pre-blasting to generate material less than 12 inches. Oversized material greater than 4 inches will not be used in fills, and will not be placed within 10 feet of finished grade, within 10 feet of manufactured slope faces (measured horizontally from the slope face), or within 3 feet of the deepest pipeline or other utilities.
- To minimize or avoid shrinking/swelling of on-site expansive soils, over-excavate for deeper fills (at least five feet below finished grade).
- Locate foundations and larger pipelines outside of cut/fill transition zones and landscaped irrigation zones.

Hyd-SCP-1 In accordance with the Water Agencies Standards (WAS), the construction contractor is required to implement a Safety Plan at each CIP construction site that would involve the transport, storage, use, and disposal of hazardous materials. Such plans will also specify storm water BMPs, to be consistent with those identified in Geo-SCP-3, to minimize downstream water quality degradation from runoff pollution associated with CIP construction activities.

3.5.5 Environmental Effects

3.5.5.1 Alternatives 1, 2, and 3

Issue 1: Geologic Hazards

Would Alternatives 1, 2, or 3, or associated facilities expose people or structures to geologic hazards, including rupture of a known earthquake fault, strong seismic ground shaking, or seismic-related ground failure, including liquefaction and/or landslides?

Ground Rupture

The proposed project is not located within an established Alquist-Priolo Earthquake Fault Zone and no active faults are known to underlie the project area. The nearest active fault lines are the Newport-Inglewood and Rose Canyon Faults, located approximately 13 to 15 miles to the west, the Coronado Bank Fault, located approximately 19 to 21 miles to the northeast, and the Palos Verdes Connected Fault, located approximately 19 to 21 miles to the northwest from the project area. Therefore, there is a low risk for ground rupture within the project area due to the apparent lack of faulting within or adjacent to the project area. Thus, no significant impacts associated with the rupture of a known earthquake fault would occur from implementation of Alternatives 1, 2, or 3, and associated facilities.

Strong Seismic Ground Shaking

All of San Diego County is located within Seismic Zone 4, which is the highest Seismic Zone with the greatest ground acceleration (County of San Diego 2007c). Like all of southern California, the proposed project has the potential to experience strong seismic ground shaking as it is located in a seismically active region. However, pursuant to the UBC requirements for seismic safety design and the CBC Title 24, design and construction of the proposed project would be engineered to withstand the expected ground acceleration that may occur in the project area from regional active faults. Proper engineering and design, along with mandatory compliance with the UBC and CBC guidelines, would minimize the risk of structural collapse and the risk to life and property from potential ground motion within the project area. Therefore, no significant impacts associated with strong seismic ground shaking would occur from implementation of Alternatives 1, 2, or 3, and associated facilities.

Seismic-Related Ground Failure, including Liquefaction

The proposed project is not located within a liquefaction hazard area. In addition, the presence of shallow dense formational materials and the lack of permanent, near-surface groundwater makes the potential for liquefaction in the project area low. Therefore, no significant impacts associated with liquefaction would occur from implementation of Alternatives 1, 2, or 3, and associated facilities.

Landslides

The Preliminary Geotechnical Evaluation (Geocon 2015a) did not encounter landslides during the project reconnaissance and none are known to exist on the project area or at a location that would impact the proposed improvements. Therefore, the project would not have potential to impact a landslide area and no significant impacts associated with landslides would occur from implementation of Alternatives 1, 2, or 3, and associated facilities.

Issue 2: Erosion

Would implementation of Alternatives 1, 2, or 3, or associated facilities result in substantial soil erosion or the loss of topsoil?

Construction of the proposed project would involve trenching activities, excavations, temporary stockpiling of excavated materials, and grading, which would result in disturbed soils that would be exposed to erosion. In addition, implementation of the proposed project would add fill soils to elevate future Lone Star Road to its ultimate grade, and cover the road with gravel. The elevation change of future Lone Star Road represents topographical modifications, which may result in permanent increases in surface runoff and soil erosion. The increase in erosion due to exposed soils from road modification is a potentially significant impact.

However, compliance with the District's adopted WRMP Geo-SCP-2 and Geo-SCP-3 would require the construction contractor for the proposed project to implement construction and post-construction BMPs in accordance with a SWPPP, as the proposed project effects would be greater than one acre in size, pursuant to the NPDES General Construction Permit. In addition, as described in Hyd-SCP-1, prior to grading, the construction contractor would be required to submit and implement a Safety Plan. This plan would also identify construction BMPs to reduce effects to surface water quality due to storm water runoff pollution from the construction area including, but not limited to, erosion control/stabilizing measures in cleared areas and on graded slopes (e.g., geotextiles, mats, fiber rolls, soil binders, temporary hydroseeding); sediment controls (e.g., temporary inlet filters, silt fences, fiber rolls, gravel bags, temporary sediment basins, check dams, street sweeping, energy dissipaters); and stabilized

construction access points (e.g., temporary gravel or pavement) and sediment stockpiles (e.g., silt fences and tarps). Implementation of construction BMPs would minimize the potential for erosion and would control surface runoff and maintain off-site flows as in pre-project conditions. In addition, as described in Geo-SCP-1, recommendations made in conjunction with the geotechnical investigations would be implemented during construction. Therefore, implementation of Geo-SCP-1, Geo-SCP-2, Geo-SCP-3, and Hyd-SCP-1 would reduce effects associated with erosion resulting from construction to a less than significant level for Alternatives 1, 2, or 3, and associated facilities.

Once construction is completed, ground disturbance associated with the meter station, outfall structure, potential pump station, and potential disinfection facility would be permanent; however, these disturbance areas would be relatively small. In addition, implementation of Geo-SCP-3 would require the construction contractor to implement post-construction BMPs in accordance with a SWPPP, pursuant to the NPDES General Construction Permit. Implementation of these measures would reduce effects associated with storm water runoff and erosion from operation of the proposed project to a less than significant level.

With implementation of Geo-SCP-1, Geo-SCP-2, Geo-SCP-3, and Hyd-SCP-1, environmental effects would be less than significant.

Issue 3: Unstable Soils

Would Alternatives 1, 2, or 3, or associated facilities be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or off-site landslides, lateral spreading, subsidence, liquefaction or collapse?

Based on the Preliminary Geotechnical Evaluation (Geocon 2015a) field reconnaissance, undocumented fill, topsoil, alluvium, and the upper two to five feet of the Otay Formation are not considered suitable for the support of structural fill or settlement sensitive structures. The proposed pipeline alignments are predominantly underlain by the Otay Formation, undocumented fill is mainly located in the northern portion of the proposed project area, and topsoil is generally found throughout the proposed project area. Therefore, the proposed project's location on unstable soil is a potentially significant impact.

However, compliance with the District's adopted WRMP Geo-SCP-4 would implement recommendations made in conjunction with the geotechnical investigations during construction, including but not limited to over-excavating unsuitable materials and replacing them with engineered fill. Therefore, with implementation of Geo-SCP-4, effects associated with unstable soils would be less than significant.

Issue 4: Expansive Soils

Would Alternatives 1, 2, or 3, or associated facilities be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1997), creating substantial risks to life or property?

Expansive behavior is attributable to the water-holding capacity of clay minerals in soil, and can adversely affect the integrity of facilities such as pavement, foundations, and subsurface structures and utilities. The clayey soils of the Otay Formation, which is the predominant soil that the proposed project is located on, typically exhibits low to high expansion potential and may become unstable over time. Other surficial soils including fill, alluvium, and terrace deposits may exhibit varying degrees of expansion potential. Fill is located in the northern portion of the project area, alluvium is located within the natural drainages along Alta Road, and terrace deposits are located along Alta Road just north of Paseo de la Fuente. Therefore, the proposed project's location on expansive soils would create a risk to the pipeline and associated facilities, and would result in a potentially significant impact.

However, compliance with the District's adopted WRMP Geo-SCP-4 would implement recommendations made in conjunction with the geotechnical investigations during construction, including but not limited to minimizing or avoiding shrinking/swelling of expansive soils in the project area by over-excavating for deeper fills (at least five feet below finished grade). Therefore, with implementation of Geo-SCP-4, effects associated with expansive soils would be less than significant.

3.5.5.2 No Action Alternative

Under the No Action Alternative, no construction, including pipelines or related infrastructure, would occur and the project area would remain in its current condition. The No Action - No Project would not result in any effects related to geologic hazards, erosion, unstable soils, or expansive soils because no construction would occur.

3.5.6 Mitigation Measures

Effects related to geology, soil characteristics, and geologic hazards would be less than significant. No mitigation measures are required.

3.6 Greenhouse Gas Emissions

This section analyzes the affected environment of Alternatives 1, 2, and 3, and associated facilities pertaining to the generation of greenhouse gases (GHGs); climate change hazards; energy use; and compliance with applicable plans, policies, and regulations adopted for the purpose of reducing the emissions of GHGs. The information in this section is based on the Air Quality and Climate Change Evaluation (Atkins 2015a).

3.6.1 Environmental Setting/Affected Environment

3.6.1.1 Global Climate Change Overview

Climate change refers to any substantial change in measures of climate (such as temperature, precipitation, or wind) lasting for decades or longer. According to the EPA, the earth's climate has changed many times during the planet's history, including events ranging from ice ages to long periods of warmth. Historically, natural factors such as volcanic eruptions, changes in the earth's orbit, and the amount of energy released from the sun have affected the earth's climate. Some GHGs, such as water vapor, occur naturally and are emitted to the atmosphere through natural processes, while others are emitted through human activities. Beginning late in the 18th century, human activities associated with the Industrial Revolution also changed the composition of the atmosphere and therefore are very likely influencing the earth's climate. For over the past 200 years, the burning of fossil fuels, such as coal and oil, and deforestation has caused the concentrations of heat-trapping GHGs to increase substantially in the atmosphere.

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without the natural heat-trapping effects of GHGs, the earth's temperature would be about 34 degrees Celsius cooler (CCAT 2007). However, it is believed that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

3.6.1.2 Greenhouse Gases

California Health and Safety Code Section 38505(g) defines GHGs to include the following compounds: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).

CO₂ enters the atmosphere through the burning of fossil fuels, solid waste, trees and wood products, and as a result of other chemical reactions such as through the manufacturing of cement. Globally, the largest source of CO₂ emissions is the combustion of fossil fuels in power plants, automobiles, industrial facilities, and other similar sources (EPA 2014). CH₄ is emitted from a variety of both natural and human-related sources, including fossil fuel production, animal husbandry, rice cultivation, biomass burning, and waste management (EPA 2013b). N₂O is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste (EPA 2014). HFCs, PFCs, and SF₆ are synthetic, powerful GHGs that are emitted from a variety of industrial processes, and the production of chlorodifluoromethane (HCFC-22). Construction or operation of Alternatives 1, 2, and 3 would not include any industrial processes, and HCFC-22 has been mostly phased out of use in the United States (UNEP 2012); therefore, these GHGs are not included in this analysis.

Individual GHGs have varying heat-trapping properties and atmospheric lifetimes. Table 3.6-1 identifies the CO₂ equivalent (CO₂e) and atmospheric lifetimes of basic GHGs. The CO₂e is a consistent methodology for comparing GHG emissions since it normalizes various GHG emissions to a consistent measure. Each GHG is compared to CO₂ with respect to its ability to trap infrared radiation, its atmospheric lifetime, and its chemical structure. For example, CH₄ is a GHG that is 21 times more potent than CO₂; therefore, one metric ton (MT) of CH₄ is equal to 21 MT CO₂e.

Table 3.6-1 Global Warming Potentials and Atmospheric Lifetimes of Basic GHGs

GHG	Formula	100-year global warming potential ⁽¹⁾	Atmospheric lifetime (years)
Carbon dioxide	CO ₂	1	50-200
Methane	CH ₄	21	12
Nitrous oxide	N ₂ O	310	114

⁽¹⁾ The warming effects over a 100-year time frame relative to other GHG.

Source: EPA 2013b

Carbon Dioxide

Carbon dioxide (CO₂) enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees, and wood products, and also as a result of other chemical reactions such as through the manufacturing of cement. Globally, the largest source of CO₂ emissions is the combustion of fossil fuels in power plants, automobiles, industrial facilities, and other similar sources. CO₂ is also removed from the atmosphere (or “sequestered”) when it is absorbed by plants as part of the biological carbon cycle. As part of the carbon cycle billions of tons of atmospheric CO₂ are removed from the atmosphere by oceans and growing plants, also known as “sinks,” and are emitted back into the atmosphere annually through respiration, decay, and combustion, also known as “sources.” When in balance, the total CO₂ emissions and removals from the entire carbon cycle are roughly equal. Since the Industrial Revolution in the 1700s, human activities, such as the burning of oil, coal, and gas or deforestation, have increased CO₂ concentrations in the atmosphere (EPA 2013b). In 2012, global atmospheric concentrations of CO₂ were 42 percent higher than they were before the Industrial Revolution (Global Carbon Project 2013).

Methane

Methane (CH₄) is emitted from a variety of both human-related and natural sources. Human-related activities include fossil fuel production, animal husbandry, rice cultivation, biomass burning, and waste management. CH₄ is emitted during the production and transport of fossil fuels. CH₄ emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills. It is estimated that 60 percent of global CH₄ emissions are related to human activities. Natural sources of CH₄ include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and wildfires. Natural processes in soil and chemical reactions in the atmosphere help remove CH₄ from the atmosphere (EPA 2013b).

Nitrous Oxide

Nitrous oxide (N₂O) is produced by both natural and human-related sources. N₂O is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste. Primary human-related sources of N₂O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic (fatty) acid production, and nitric acid

production. N₂O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. Globally, about 40 percent of total N₂O emissions come from human activities (EPA 2013b).

3.6.1.3 Regional Adverse Effects of Climate Change

The San Diego Foundation's Regional Focus 2050 Working Paper and Technical Assessment (Focus 2050) explored what the San Diego region would be like in 2050 if current climate change trends continue (San Diego Foundation 2008). The range of impacts presented in Focus 2050 are based on projections of climate change on the San Diego region using three climate models and two emissions scenarios drawn from those used by the Intergovernmental Panel on Climate Change (IPCC). These impacts include warmer temperatures, sea level rise, water supply shortfalls, increased wildfire occurrence, ecosystem stress, increased energy demand, and public health deterioration. The Air Quality and Climate Change Evaluation (Atkins 2015a) provides a summary of these potential adverse effects of climate change on the San Diego region, as projected in Focus 2050.

3.6.1.4 Global, National, Statewide, and Countywide GHG Inventories

In an effort to evaluate and reduce the potential adverse impact of climate change, global, national, state, and local organizations have conducted GHG inventories to estimate their levels of GHG emissions and removals. The following summarizes the results of these GHG inventories.

Global

Worldwide anthropogenic GHG emissions in 2006 were approximately 49,000 million metric tons (MMT) CO₂e, including ongoing emissions from industrial and agricultural sources and emissions from land use changes (i.e., deforestation, biomass decay) (IPCC 2007). CO₂ emissions from fossil fuel use accounts for 56.6 percent of the total emissions of 49,000 MMT of CO₂e (which includes land use changes) and all CO₂ emissions are 76.7 percent of the total. CH₄ emissions account for 14.3 percent and N₂O emissions for 7.9 percent of GHG (IPCC 2007).

United States

The EPA publication, *Inventory of U.S. GHG Emissions and Sinks: 1990-2013*, provides a comprehensive emissions inventory of the nation's primary anthropogenic sources and sinks of GHGs. In 2013, total U.S. GHG emissions were 6,673 MMT CO₂e. Overall, total U.S. emissions rose by 5.9 percent from 1990 to 2013, and emissions increased from 2012 to 2013 by 2.0 percent. The recent increase can be attributed to multiple factors including increased emissions from electricity generation, an increase in miles traveled by on-road vehicles, and an increase in industrial production (EPA 2015).

California

Over the last decade, California's gross emissions of GHGs decreased by 1.6 percent from 466.3 MMT CO₂e in 2000 to 458.7 MMT CO₂e in 2012, with a maximum of 492.7 MMT CO₂e in 2004. During the same period, California's population grew by 11 percent from 34 to 37.8 million people. As a result, California's per capita GHG emissions have decreased over the last 12 years from 13.7 to 12.1 MMT CO₂e per person. In 2012, emissions continued to decrease for the transportation sector. GHG emissions from electric power increased in 2012 for the first time since 2008 due to the unexpected closure of the San Onofre Nuclear Generating Station and drought conditions that decreased hydropower generation. Emissions from all other sectors remained relatively flat from 2011 (CARB 2014a).

San Diego County

In addition to the State of California GHG Inventory, the University of San Diego School of Law Energy Policy Initiative Center (EPIC) prepared a more specific county-wide GHG inventory in 2008. This San Diego County GHG Inventory is a detailed inventory that considers the unique characteristics of the region in calculating emissions. A summary of the inventory results, by category and percent contribution for the year 2006, is provided in Table 3.6-2.

Table 3.6-2 County of San Diego GHG Emissions by Category (2006)

Sector	Total Emissions (MMT CO ₂ e)	Percent of Total Emissions
On-Road Transportation	15.6	45
Electricity	8.5	25
Natural Gas Consumption	3	9
Civil Aviation	1.7	5
Industrial Processes & Products	1.6	5
Other Fuels / Other	1.1	3
Off-Road Equipment & Vehicles	1.3	3
Waste	0.7	2
Agriculture/Forestry/Land Use	0.4	2
Rail	0.3	1
Water-Borne Navigation	0.1	0.4
Total	34.4	100

Note: Numbers may not total to 100 percent due to rounding

Source: Energy Policy Initiative Center, University of San Diego School of Law, 2008

Table 3.6-2 shows that, in 2006, a total of 34.4 MMT CO₂e was generated by both the incorporated and unincorporated areas of the county. The largest contributor of GHG was the on-road transportation category, which composed 46 percent (16 MMT CO₂e) of the total amount. The second highest contributor was the electricity category, which contributed 9 MMT CO₂e, or 25 percent of the total. Together, the on-road transportation and electricity categories composed 70 percent of the total GHG emissions for the County of San Diego. Natural gas consumption, civil aviation, industrial processes, off-road transportation, waste, agriculture, rail, water-borne navigation, and other fuels contributed the remainder.

Otay Water District Facilities

The District completed an inventory of their GHG emissions, which calculated direct and indirect emissions of the GHGs emitted by the District in the years 2006 and 2007 (ICF Jones & Stokes 2008). Sources of GHGs include direct emissions produced on District property, including stationary combustion sources (boilers, heaters, and emergency generators), mobile sources (District-owned vehicles), water reclamation, and refrigeration, and indirect emissions from consumption of electricity. GHG emissions at the District are dominated by three pollutants, including CO₂ from the combustion of fossil fuels, CH₄, most of which is associated with the water reclamation plant, and N₂O, which is emitted in small amounts from combustion and water reclamation processes. The GHG inventory found that the District emits an average of 14,833 MT of CO₂e in GHG per year when considering both direct and indirect emission sources (as shown in Table 3.6-3). Electricity usage represents about half of the total

(51 percent), followed by water reclamation (30 percent), stationary sources (14 percent), and mobile sources (5 percent).

Table 3.6-3 Average Annual District GHG Emissions (2006-2007)				
Source	Annual Emissions (metric tons)			
	CO ₂	CH ₄	N ₂ O	CO ₂ e
<i>Indirect Sources</i>				
Electricity Usage	7,573	0.3	0.1	7,604
<i>Direct Sources</i>				
Stationary	2,044	0.2	0.3	2,102
Mobile	753	0.01	0.01	756
Water Reclamation	N/A	210	0.05	4,422
Total Direct	2,757	210	0.4	4,099
Total Indirect and Direct	10,330	210	0.4	14,883
Source: Otay Water District Carbon Footprint Assessment (ICF Jones & Stokes 2008)				

3.6.1.5 Existing Energy Setting

The project site is located in an area served by SDG&E. SDG&E is a regulated public utility that provides energy service to 3.4 million people through 1.4 million electric meters and 870,000 natural gas meters in San Diego and southern Orange counties (SDG&E 2015). The majority of the proposed pipeline alignment is currently undeveloped. However, several detention facilities are located surrounding the northern terminus of the project site and are currently provided energy service by SDG&E. Additionally, the Otay Mesa Energy Center is located approximately 650 feet north of the proposed alignments in Paseo de la Fuente. The Otay Mesa Energy Center is natural gas fueled power plant that provides SDG&E electricity. The plant has a base load of 503 megawatts (MW) (Calpine 2015).

3.6.2 Regulatory Setting

3.6.2.1 Federal Regulations and Standards

U.S. Environmental Protection Agency Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards (2010)

In 2010, EPA issued new standards for light-duty vehicles that will reduce GHG emissions and improve fuel economy. These standards apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. EPA had previously found that the combined emissions of these well-mixed GHG from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

3.6.2.2 State Regulations and Standards

Assembly Bill 32, the California Global Warming Solutions Act of 2006

In September 2006, the California State Legislature adopted AB 32, the California Global Warming Solutions Act of 2006. AB 32 focuses on reducing GHGs in California. GHGs as defined under AB 32 include CO₂, CH₄, N₂O, HFCs, CFCs, and SF₆. Under AB 32, CARB has the primary responsibility for reducing GHG emissions and continues the California Climate Action Team (CCAT) to coordinate

statewide efforts and promote strategies that can be undertaken by many other California agencies. AB 32 requires the CARB to adopt rules and regulations that would achieve GHG emissions equivalent to state-wide levels in 1990 by 2020.

In general, AB 32 directs the CARB to do the following:

- Make publicly available a list of discrete early action GHG emission reduction measures that can be implemented prior to the adoption of the statewide GHG limit and the measures required to achieve compliance with the statewide limit;
- Make publicly available a GHG inventory for the year 1990 and determine target levels for 2020;
- On or before January 1, 2010, adopt regulations to implement the early action GHG emission reduction measures;
- On or before January 1, 2011, adopt quantifiable, verifiable, and enforceable emission reduction measures by regulation that would achieve the statewide GHG emissions limit by 2020, to become operative on January 1, 2012, at the latest. The emission reduction measures may include direct emission reduction measures, alternative compliance mechanisms, and potential monetary and non-monetary incentives that reduce GHG emissions from any sources or categories of sources that CARB finds necessary to achieve the statewide GHG emissions limit; and
- Monitor compliance with and enforce any emission reduction measure adopted pursuant to AB 32.

Regarding the first two bullets, CARB has made available a list of discrete early action GHG emission reduction measures. CARB has also published a staff report titled *California 1990 GHG Emissions Level and 2020 Emissions Limit* that determined the statewide levels of GHG emissions in 1990 (CARB 2007). CARB identified 427 MMT CO₂e as the total statewide aggregated GHG 1990 emissions level and 2020 emissions limit. Additionally, in December 2008, CARB adopted the Climate Change Scoping Plan, which outlines the state's strategy to achieve the 2020 GHG limit (CARB 2008). This scoping plan proposes a comprehensive set of actions designed to reduce overall GHG emissions in California, improve the environment, reduce dependence on oil, diversify energy sources, save energy, create new jobs, and enhance public health. The plan emphasizes a cap-and-trade program, but also includes the discrete early actions.

The first update to the Scoping Plan was adopted in May 2014 (CARB 2014c). The First Update identifies opportunities for GHG reductions using existing and new funding sources, defines CARB's climate change priorities for the next five years, and establishes the plan for meeting the long-term goals of EO S-3-05, described below. The Update highlights California's progress toward meeting the 2020 GHG emission reduction goals defined in the initial Scoping Plan and evaluates GHG reduction strategies that may be aligned with other state priorities for water, waste, natural resources, clean energy, transportation, and land use. According to the plan, California is on track to meet the 2020 GHG emission reduction goal.

Executive Order S-3-05

California Governor Arnold Schwarzenegger announced on June 1, 2005, through EO S-3-05, the following GHG emission reduction targets: by 2010 reduce GHG emissions to 2000 levels; by 2020 reduce GHG emissions to 1990 levels; and by 2050 reduce GHG emissions to 80 percent below 1990 levels. The first CCAT Report to the Governor in 2006 contained recommendations and strategies to help ensure the targets in EO S-3-05 are met. The latest CCAT Biennial Report was released in 2010. It

expands on the policy-oriented 2006 assessment. This report provides new information and scientific findings. The new information and details in the CCAT Assessment Report include development of new climate and sea-level projections using new information and tools that have become available, and evaluation of climate change within the context of broader social changes such as land-use changes and demographic shifts (CCAT 2010). The action items in the draft report focus on the preparation of the Climate Change Adaptation Strategy required by EO S-13-08.

Executive Order S-13-08

On November 14, 2008, Governor Arnold Schwarzenegger issued EO S-13-08, the Climate Adaptation and Sea Level Rise Planning Directive, which provides clear direction for how the state should plan for future climate impacts. S-13-08 calls for the implementation of four key actions to reduce the vulnerability of California to climate change:

- 1) Initiate California's first statewide Climate Change Adaptation Strategy (CAS) that would assess the state's expected climate change impacts, identify where California is most vulnerable, and recommend climate adaptation policies;
- 2) Request the National Academy of Science establish an expert panel to report on sea level rise impacts in California in order to inform state planning and development efforts;
- 3) Issue interim guidance to state agencies for how to plan for sea level rise in designated coastal and floodplain areas for new and existing projects; and
- 4) Initiate studies on critical infrastructure projects, and land use policies vulnerable to sea level rise.

The California Resources Agency is currently developing the CAS in coordination with the California EPA; the CCAT; the Business, Transportation and Housing Agency; California Department of Public Health; and other key stakeholders. The CAS would synthesize the most up-to-date information on expected climate change impacts to California for policy-makers and resource managers, provide strategies to promote resiliency to these impacts, and develop implementation plans for short- and long-term actions (California Climate Change Portal 2009). The Public Review Draft CAS was released on August 3, 2009, and a progress report was published in 2010.

California Code of Regulations Title 24

The California Energy Resources Conservation and Development Commission adopted Energy Conservation Standards for new residential and nonresidential buildings in June 1977. The Standards were most recently revised in 2008 (24 CCR 6). Title 24 requires that building shells and building components be designed to conserve energy. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. This program has been partially responsible for keeping California's per capita energy use approximately constant over the past 30 years.

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11, Title 24) was adopted as part of the California Building Standards Code (24 CCR). Part 11 establishes voluntary standards that became mandatory in the 2010 edition of the code, including planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.

3.6.3 Thresholds of Significance

3.6.3.1 CEQA Significance Criteria

Thresholds used to evaluate potential GHG effects are based on applicable threshold criteria in Appendix G of the CEQA Guidelines. The threshold used to evaluate energy effects is based on Appendix F of the CEQA Guidelines. A significant impact associated with GHG emissions or energy use would occur in the project would:

- 1) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
- 2) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG.
- 3) Result in the wasteful, inefficient, or unnecessary consumption of energy during construction, operation, or maintenance of the project.

Note that the CEQA Guidelines do not quantify the amount of GHG emissions that would constitute a significant impact on the environment. Instead, they leave the determination of the significance of GHG emissions up to the lead agency, and authorize the lead agency to consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts (CEQA Guidelines Sections 15064.4(a), 15064.7(c)).

Specifically, CEQA Guidelines Section 15064.7(c) states, "[w]hen adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence."

The District utilizes the thresholds of significance adopted by the County of San Diego in November 2013 to determine whether the GHG emissions from a project may have a significant impact on the environment. The County's Guidelines for Determining Significance for Climate Change are based on regional data including the incorporated cities and therefore may be used by lead agencies in the region other than the County of San Diego (County of San Diego 2013a). The purpose of the guidelines is to ensure that new development in San Diego County achieves its fair share of emissions reductions needed to meet the statewide AB 32 mandate.

The County's guidelines establish a screening level threshold for annual emissions of 2,500 MT CO₂e. Projects that would emit less than 2,500 MT CO₂e are considered to have insignificant emissions and would not affect the region's ability to meet reduction goals. This screening level applies separately to both construction and operation. Therefore, projects that result in emissions that are below this screening level would not result in significant GHG emissions and no further analysis is required.

3.6.3.2 NEPA Considerations

The Department considers the consistency of a proposed project with federal guidance concerning the evaluation and reduction of GHG emissions. There are no federal significance criteria established for GHG emissions; however, the CEQ has established 25,000 MT CO₂e as the minimum level of GHG emissions that warrants description in an environmental analysis for consideration by decision makers and the public (CEQ 2014). Additionally, based on CEQ recommendation, a project would result in a

significant impact if it would exacerbate the adverse effects of climate change or result in a substantial increase in exposure to these effects.

3.6.4 Applicable Regulatory Measures

As described in Section 3.1.4, implementation of the District's WRMP, as identified in the District's WRMP PEIR, includes PDFs and SCPs to reduce potential environmental effects associated with energy usage that results from District projects. The following PDFs and SCPs are relevant to the proposed project:

- | | |
|-----------|---|
| Ene-PDF-1 | CIP projects featuring electric pumps and motors will use high efficiency pumps and motors. |
| Ene-PDF-2 | All outdoor (security) lighting installed at the above-ground CIP facilities (i.e., storage reservoirs/tanks and pump stations) under the 2009 WRMP Update will use energy-efficient light emitting diodes, with motion sensor lighting controls to limit usage. Lighting adjacent to native vegetation communities will be of low illuminations, shielded, and directed downwards and away from these areas to avoid potential effects to nocturnal wildlife from increased predation that would occur from "spill-over" of nighttime light levels into the adjacent habitats. |
| Ene-PDF-3 | The District will conduct annual pump efficiency tests at each CIP project featuring a pump and correct any decreases in efficiency through the repair or replacement of appropriate pump components. |
| Ene-PDF-4 | The District will employ soft starts and stops to all CIP project pumps and motors to reduce total electricity consumption during operation of pumps and motors. |
| Air-SCP-3 | <p>During project construction activities, the CIP Project Construction Manager will supervise the following BMPs to reduce emissions associated with diesel equipment:</p> <ul style="list-style-type: none">■ Properly operate and maintain all diesel-powered vehicles and equipment.■ Retrofit diesel-powered equipment with "after-treatment" products (e.g., diesel oxidation catalysts, diesel particulate filters).■ Use electric or natural gas-powered construction equipment in lieu of gasoline or diesel-powered engines.■ Turn off all diesel-powered vehicles and gasoline-powered equipment when not in use for more than five minutes.■ Support and encourage ridesharing and transit incentives for the construction crew.■ Encourage the use of locally available building materials, such as concrete, stucco, and interior finishes.■ Use light-colored or a high-albedo (reflectivity) concrete and asphalt paving materials with a Solar Reflectance Index of 29 or higher.■ Establish a construction management plan with the local waste hauler that diverts a minimum of 50% of construction, demolition, and site clearing waste. |

3.6.5 Environmental Effects

3.6.5.1 Alternatives 1, 2, and 3

Issue 1: Direct and Indirect Generation of GHG

Would implementation of Alternatives 1, 2, or 3, or associated facilities generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

The potential for construction and operational activities associated with Alternatives 1, 2, and 3 to result in emissions of GHGs is described below.

Construction

Construction of Alternatives 1, 2, and 3 would take place over an approximately 10-month period and would include overlapping construction activities. Pipeline installation would occur concurrently with construction of permanent structures. It is anticipated that the construction fleets for grading, trenching, paving, and construction are used simultaneously, with approximately 50 percent of the fleet in operation at any given time (a total of 5 hours of operation per day per equipment). Disturbance to approximately 40 acres would occur during construction, with another 10 acres being permanently disturbed. During construction approximately 26,000 cubic yards of material would be exported and a total of 8,000 cubic yards imported for trench backfill. A total of 34 one-way truck trips (e.g., 17 roundtrips) would be required per day. It is anticipated that the 24-person construction crew would each generate 6 one-way trips, for a total of 144 daily worker vehicle trips. Refer to the Air Quality and Climate Change Evaluation (Atkins 2015a) for a complete list of anticipated construction requirements.

Construction of Alternatives 1, 2, and 3 would contribute a total of approximately 1,737 MT CO₂e over the proposed 10-month construction period, as shown in Table 3.6-4. Compliance with Air-SCP-3 would likely result in lower emissions than reported in Table 3.6-4. However, emissions reduction quantification for the recommended measures is not available at this time because project-specific implementation information is unknown. Construction emissions would not exceed the County screening level threshold of 2,500 MT CO₂e. Therefore, Alternatives 1, 2, and 3 would not result in significant GHG emissions during construction.

Table 3.6-4 Estimated Annual GHG Emissions from Construction

Emission Source	GHG Emissions (Metric Tons CO ₂ e)
Grading, Trenching, Paving ⁽¹⁾	1,630
Building Construction	97
Architectural Coating	10
Total Construction Emissions	1,737

⁽¹⁾Includes all worker and truck trips.

Source: CalEEMod Version 2013.2.2 (CARB 2013a). See Attachment A for model output.

Operation

Operational GHG emissions from the potential disinfection facility and pump station would include indirect emissions from electricity and natural gas usage and direct emissions from mobile sources, landscaping, and generator testing. Potential GHG emissions from these sources are discussed below. Implementation of the proposed project would not result in an increase in demand for water or solid

waste disposal services; therefore, no increase in GHG emissions would occur from these sources. Mobile source, landscaping and emergency generator testing criteria are detailed in Section 3.1.5.1, Consistency with Air Standards.

The pipeline component of Alternatives 1, 2, and 3, once constructed, would not require the use of electricity, emergency generators, or any other type of fuel-consuming operating equipment. However, the potential disinfection facility and potential pump station would result in an increase in electricity and natural gas demand from operation of equipment and security lighting. Projected energy use for an all-electric pump station would be approximately 19 million kilowatt hours (kWh) per year (refer to Section 5.1 of the Air Quality and Climate Change Evaluation [Atkins 2015a] for complete details on energy use estimates). Projected energy use at a pump station with half electricity-powered and half natural gas-powered pumping would be approximately 9.7 million kWh of electricity and 83 million kBTU of natural gas.

The disinfection facility would be electric powered. This analysis assumes the disinfection facility would include ultraviolet (UV) treatment. If UV treatment is ultimately not required, projected energy use at the disinfection facility would be reduced. With an annual average flow of 50 MGD, the disinfection facility is estimated to require approximately 725,000 kWh of electricity annually.

Table 3.6-5 summarizes total GHG emissions assuming a mix of electric and natural gas pumps at the pump station. As shown in Table 3.6-5, operation of the project is estimated to result in 8,505 MT CO₂e per year if a mix of power sources is selected. Table 3.6-6 summarizes total GHG emissions from the operation of Alternatives 1, 2, and 3, assuming an all-electric pump station. As shown in Table 3.6-6, operation of the project using all electric pumps is estimated to result in 7,153 MT CO₂e per year.

Table 3.6-5 Estimated Annual Operational GHG Emissions – Electric and Natural Gas Pump Station

Source	Annual Emissions (CO ₂ e MT)	Percent of Total Annual Emissions
Natural Gas Usage	4,524	53
Electricity Usage	3,431	40
Mobile (Vehicular Use)	536	6
Emergency Generator Testing	13	<1
Area (Landscape Equipment)	1	<1
Total	8,505	100
Significance Threshold	2,500	
Significant Impact?	Yes	

Source: CalEEMod Version 2013.2.2 (CARB 2013a), EPA 2008. See the Air Quality and Climate Change Evaluation (Atkins 2015a).

As shown in Table 3.6-5 and Table 3.6-6, approximately 90 percent of emissions are attributable to projected energy usage. Emissions would likely be lower than reported in Table 3.6-5 and Table 3.6-6, including energy emissions, because modeling does not take into account compliance with Ene-PDF-1 through Ene-PDF-4, which require high-efficiency pumps and motors, energy-efficient lighting, pump efficiency tests, and soft starts and stops to all project pumps and motors. Emissions reduction quantification for these measures is not available at this time because project-specific implementation information is unknown.

It should also be noted that a number of conservative assumptions have been made in estimating energy usage and GHG emissions. The pump station may ultimately not be needed, or the pump lift to 196 feet could be less, which would reduce energy demand. In addition, UV disinfection may not be required. Further, by using this source of water, the District would be using significantly less imported water from the State Water Project and the Colorado River, both of which use significant energy to convey the water. However, an estimate of net energy savings is not available at this time. Therefore, operational GHG emissions would not exceed the CEQ screening level of 25,000 MT CO₂e, but would have the potential to exceed the CEQA screening level threshold of 2,500 MT CO₂e. Therefore, this impact would be potentially significant.

Table 3.6-6 Estimated Annual Operational GHG Emissions – Electric Pump Station

Source	Annual Emissions (CO ₂ e MT)	Percent of Total Annual Emissions
Natural Gas Usage	0	0
Electricity Usage	6,603	92
Mobile (Vehicular Use)	536	7
Emergency Generator Testing	13	<1
Area (Landscape Equipment)	1	<1
Total	7,153	100
Significance Threshold	2,500	
Significant Impact?	Yes	

Source: CalEEMod Version 2013.2.2 (CARB 2013a), EPA 2008. See the Air Quality and Climate Change Evaluation (Atkins 2015a).

Issue 2: Hazards Related to Climate Change

Would implementation of Alternatives 1, 2, or 3, or associated facilities substantially increase exposure to hazards related to climate change?

Section 15126.2 of the CEQA Guidelines and the CEQ's draft guidance for addressing effects related to GHG emissions state that the GHG analysis should also consider the environmental effects of climate change on a project. Based on CEQ recommendation, a project would result in a significant impact if it would exacerbate the adverse effects of climate change or result in a substantial increase in exposure to these effects. The San Diego Foundation's Regional Focus 2050 Working Paper and Technical Assessment projected potential adverse effects on the San Diego region related to climate, energy need, public health, wildfires, water supply, sea level, and ecosystems. Implementation of Alternatives 1, 2, and 3 would be primarily related to the passive delivery of water. No habitable structures are proposed and the majority of proposed facilities would be located underground. As a result, implementation of Alternatives 1, 2, and 3 would not introduce substantial populations of people into the project area and would not expose people to hazards associated with future climate change such as, but not limited to, increased erosion, sea level rise, or flooding; increased risk from wildfire; loss of biodiversity; and public health effects caused or exacerbated by projected extreme heat events and increased temperatures. Implementation of Alternatives 1, 2, and 3 would not exacerbate potential effects on the existing population because the proposed project is not located in a coastal location, would increase water supply availability for potable water use and firefighting, would not result in significant emissions of air pollutants, and would not impede wildlife movement or result in a significant loss of habitat. The project

would be located primarily underground in an area planned for development. Therefore, implementation of Alternatives 1, 2, and 3 would not result in increased exposure to hazards as a result of climate change.

Issue 3: Conflict with Applicable Plan, Policy, or Regulation

Would implementation of Alternatives 1, 2, 3, or associated facilities conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG?

The applicable policy adopted for the purpose of reducing GHG emissions is AB 32. The purpose of the County's Guidelines for Determining Significance for Climate Change is to ensure that new development in San Diego County achieves its fair share of emissions reductions needed to meet the statewide AB 32 mandate. Therefore, a project that would result in a less than significant impact under the County's threshold would not conflict with AB 32. As demonstrated under Issue 1, construction of Alternatives 1, 2, and 3 would exceed the County's threshold. However, operational GHG emissions would have the potential to exceed the CEQA screening level threshold of 2,500 MT CO₂e as a result of energy use at the potential pump station. Therefore, this impact would be potentially significant.

Issue 4: Energy Consumption

Would implementation of Alternatives 1, 2, 3, or associated facilities result in the wasteful, inefficient, or unnecessary consumption of energy during construction, operation, or maintenance of the project?

Construction of Alternatives 1, 2, and 3 would require the use of fossil fuels to operate construction equipment, and for haul truck trips and worker vehicle trips. Construction would require approximately 6,800 haul truck trips and 14,400 worker vehicle trips. Due to the project's location in a primarily undeveloped area, alternative transportation methods to replace vehicle trips and alternative power sources, such as electrical outlets, are not available to replace diesel power for construction equipment. Because construction would not require the use of electricity or natural gas, construction of Alternatives 1, 2, and 3 would not affect local and regional energy supplies or peak demand of energy. Additionally, implementation of Air-SCP-3 would reduce fossil fuel use by requiring that all equipment be properly maintained and turned off when not in use for more than five minutes. Ridesharing for the construction crew would be encouraged. Therefore, construction of the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy.

Operation and maintenance of Alternatives 1, 2, and 3 would require approximately four two-way maintenance trips per week and two chemical deliveries. Proper maintenance and operation would facilitate optimal efficiency of the potential pump station and disinfection facility and avoid deteriorating or emergency conditions that may result in wasteful or inefficient energy use. Therefore, use of fossil fuels for operation and maintenance would not result in unnecessary energy use.

The pipeline component of Alternatives 1, 2, and 3, once constructed, would not require the use of electricity, emergency generators, or any other type of fuel-consuming operating equipment. However, operation of the proposed disinfection facility and potential pump station would result in an increase in electricity and natural gas demand from operation of equipment and security lighting. Projected energy use for an all-electric pump station would be approximately 19 million KWh per year. Projected energy use at a pump station with half electricity-powered and half natural gas-powered pumping would be approximately 9.7 million KWh of electricity and 83 million kBTU of natural gas. The disinfection facility would be electric powered and is estimated to require approximately 725,000 kWh of electricity annually. Energy use from the proposed facilities is anticipated to be constant and would not increase in

the afternoon and evening, the usual regional peak hours, compared to the other operating hours of the facilities. This assumption is conservative. Use of the pumps would respond to the District's need for water, and if the pump station and disinfection are not constantly in operation, it is likely that use of the pumps could occur during off-peak energy hours. Implementation of Ene-PDF-1 through Ene-PDF-4 would require use of high-efficiency pumps and motors, energy-efficient lighting, annual efficiency tests, and soft starts and stops of pumps and motors to reduce natural gas and electricity use. Therefore, energy demand would not be wasteful or inefficient.

Although the area surrounding Alternatives 1, 2, and 3 is primarily undeveloped under existing conditions, the area is planned for future development. Therefore, the extension of utilities to the proposed disinfection facility and potential pump station would not result in extension of infrastructure that may result in unplanned population growth and associated energy demand. Additionally, the proposed project is intended to serve planned population growth. Providing service to these planned developments would require energy use. If water from the proposed project is not utilized by the District, the District would serve demand using imported water, which would ultimately result in greater energy demand to provide the same amount of water. Therefore, operation of the proposed project would not result in unnecessary energy use. Effects related to energy consumption would be less than significant.

3.6.5.2 No Action Alternative

Under the No Action Alternative, no construction, including pipelines or related infrastructure, would occur and the project area would remain in its current condition. Therefore, the No Action - No Project would not result in any effects related to the hazards of climate change and energy consumption because no construction would occur. Additionally, the significant and unavoidable effects related to the direct and indirect generation of GHG emissions and compliance with AB 32 would be avoided under this alternative.

3.6.6 Mitigation Measures

As described in Section 3.6.5.1, the energy emissions estimates in Table 3.6-5 and Table 3.6-6 are conservative because they do not take into account compliance with Ene-PDF-1 through Ene-PDF-4, which require high-efficiency pumps and motors, energy-efficient lighting, pump efficiency tests, and soft starts and stops to all project pumps and motors. Additionally, the estimates assume a worst-case annual average flow rate of 50 MGD and that UV treatment will be required at the disinfection facility. Therefore, GHG emissions from the proposed project will likely be lower than reported in Table 3.6-5 and Table 3.6-6. At this time, sufficient detail is not available about the design and operation of the proposed facilities to determine where energy use may be reduced, and to what extent. For example, the specifications for the proposed pumps are currently unknown; therefore, it cannot be determined what types of alternative pumps are available and whether the decreased energy use could reduce emissions to below a significant level. However, the potential pump station is projected to demand approximately 95 percent of total project energy use. Depending on final project design, this pump station may be eliminated. If the pump station is not required, GHG emissions from energy use would be reduced to approximately 240 MT CO₂e. Total GHG emissions would be reduced to less than 2,500 MT CO₂e, and would not be significant. Eliminating the potential pump station would reduce effects related to GHG emissions to a less than significant level. A project that would result in a less than significant impact under the County's threshold will also not conflict with AB 32. However, eliminating the pump station may not be feasible. Therefore, effects related to GHG emissions are potentially significant and

unavoidable. Because the County's threshold was established based on emissions reductions needed to meet the goals of AB 32, Alternatives 1, 2, and 3 will also conflict with AB 32 and effects will be significant and unavoidable.

Implementation of the proposed project would not result in significant energy consumption or significant direct or indirect hazards related to climate change. No mitigation measures are required for these issues.

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3.7 Hazards and Hazardous Materials

This section analyzes the affected environment of Alternatives 1, 2, and 3, and associated facilities pertaining to hazards and hazardous materials. The information presented in this section is based on the Phase I ESA (Geocon 2015c).

3.7.1 Environmental Setting/Affected Environment

3.7.1.1 Hazardous Site Database Records Search

The Phase I ESA for the proposed project evaluated current environmental conditions and the presence of hazardous materials or substances. As part of the Phase I ESA, Geocon and Environmental Data Resources (EDR) conducted a search of standard environmental regulatory databases to determine if any listed hazardous sites are located within the proposed project area, or within a one-mile radius. The Phase I ESA reviewed a broad range of standard federal, state, and local regulatory databases. Additional information was obtained from review of available reports on the SWRCB GeoTracker website and the Department of Toxic Substances Control (DTSC) EnviroStor website.

The Phase I ESA database search identified two properties within the project area, and six properties within a one-mile radius to the project area. The six sites within a one-mile radius have gone through a remediation process and been designated with a “completed, case closed” cleanup status; are at a great enough distance from the proposed project area to result in a low potential impact; or do not pose a threat to human health, the environment, or nearby sensitive receptors. Therefore, the six properties within a one-mile radius of the project area are not further discussed. A full list of these sites and their environmental conditions can be found in the Phase I ESA (Geocon 2015c).

The two properties identified within the project area consist of the San Diego Regional Firearms Training Center located at 440 Alta Road, and Loop Road CG 4530, now known as the existing paved portion of Paseo de la Fuente. The San Diego Regional Firearms Training Center is listed in the Spills, Leaks, Investigations, and Cleanup Programs, San Diego County Hazardous Materials Management Division and San Diego County Site Assessment and Mitigation databases. The records indicate that discolored soil and freestanding liquid were observed, likely attributed to the heavy equipment used on the firing range to recover bullets. All soil and water samples analyzed were reported below laboratory detection limits. Based on the results, the County of San Diego Department of Environmental Health (DEH) has determined that the firing range does not pose a threat to human health, the environment, or nearby receptors. The case is listed as closed as of April 7, 2011. The second property within the project area, Paseo de la Fuente, is listed in the enforcement database as a dredge/fill property. The records indicate a failure to comply with the 401 certification and construction NPDES database. Since the violation was related to construction activities, and the existing paved portion of Paseo de la Fuente is now fully constructed, this property is not likely to affect development of the proposed project.

3.7.1.2 Site Reconnaissance

The Phase I ESA reconnaissance of the proposed project area occurred on November 15, 2013, and February 26, 2015. The purpose of the reconnaissance was to survey the proposed project area and adjacent property conditions to attempt to identify visual indicators of potential hazardous waste facilities. The Phase I ESA considered the limits of the proposed project area to extend approximately 200 feet in each direction from the approximate location of the pipeline alignments and associated

facilities. The following information is based on observations noted or information obtained during the site reconnaissance.

Conditions Associated with Existing Uses

The proposed project area includes undeveloped vacant land near the United States-Mexico border, existing dirt access roads, existing paved portions of Paseo de la Fuente and Alta Road, and an existing dirt access road to Roll Reservoir. Observations in the proposed project area included two SDG&E utility yards near the United States-Mexico border, adjacent to the SDG&E power transmission lines and easement that continue northwesterly past Roll Reservoir, and pad-mounted transformers adjacent to Paseo de la Fuente. Three storm drain culverts/outlets are located south of the terminus of Paseo de la Fuente and three drainage basins are located adjacent to Alta Road. In addition, the Phase I ESA observed an abandoned rusty vehicle located northwest of the SDG&E utility yards adjacent to the SDG&E transmission line. The Phase I ESA did not observe evidence of spills, staining, or illegal dumping on the proposed project area.

Conditions Associated with Prior Uses

A review of aerial photographs and topographic maps indicated that the proposed project area and adjacent properties were used for agricultural purposes from as early as 1953 to as late as 1996. Historical agricultural use may have included the use of pesticides, which may be present within the shallow soils in the project area.

Conditions Associated with Adjacent Uses

Two correctional facilities, the Otay Mesa Detention Facility and the Richard J. Donovan Correctional Facility, are located approximately 230 feet northeast and approximately 800 feet west of Roll Reservoir, respectively. The San Diego Correctional Facility is located approximately 230 feet east of Alta Road and north of Calzada de la Fuente. The former Brown Field Bombing Range, acquired by the U.S. Navy and currently undeveloped, is located approximately 800 feet west of Roll Reservoir. The Otay Mesa Energy Center is located approximately 550 feet northeast of Paseo de la Fuente and Kuebler Ranch, and an RV storage yard is located adjacent to and north of Kuebler Ranch Road. A newly constructed parking lot is located to the west of Alta Road and north of Donovan State Prison Road. The Travel Plaza Site, an automobile auction lot, is located south of Otay Mesa Road at the intersection of Otay Mesa Road and Alta Road, and a Vehicle Transfer Facility, an automobile storage lot, is located north of the intersection of Otay Mesa Road and Enrico Fermi Drive. In general, the remainder of the adjacent land in the project area is undeveloped. No direct evidence of potential hazardous waste effects was observed during the site reconnaissance at the adjacent properties.

3.7.2 Regulatory Setting

3.7.2.1 Federal Regulations and Standards

Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984

The Resource Conservation and Recovery Act (RCRA) establishes a framework for national programs to achieve environmentally sound management of both hazardous and non-hazardous wastes. These laws provide for the “cradle to grave” regulation of hazardous wastes. Any business, institution, or other entity that generates hazardous waste is required to identify and track its hazardous waste from the point of generation until it is recycled, reused, or disposed.

The EPA has the primary responsibility for implementing RCRA; however, individual states are encouraged to seek authorization to implement some or all of RCRA provisions. California received authority to implement the RCRA program in August 1992. DTSC is responsible for implementing the RCRA program as well as California's own hazardous waste laws, which are collectively known as the Hazardous Waste Control Law. Under the Certified Unified Program Agency (CUPA) program, DTSC has in turn delegated enforcement authority to the County of San Diego, which has direct oversight of hazardous waste generation, transportation, treatment, storage, and disposal.

Hazardous Materials Transportation Act

USDOT regulates hazardous materials transportation under Title 49 CFR. State agencies with primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol (HCP) and the Caltrans. These agencies also govern permitting for hazardous materials transportation.

Title 29 Code of Federal Regulations, Occupational Safety and Health Act

The federal Occupational Safety and Health Act (OSHA) is intended to ensure that employers provide their workers with a work environment free from recognized hazards to safety and health, such as exposure to toxic chemicals, excessive noise levels, mechanical dangers, or unsanitary conditions. Operation of this program is delegated to the state and operated by Cal/OSHA.

3.7.2.2 State Regulations and Standards

Emergency Response to Hazardous Materials Incidents

California has developed an Emergency Response Plan to coordinate emergency services provided by federal, state, and local government, and private agencies. The plan is administered by the Office of Emergency Services and includes response to hazardous materials incidents. The Office of Emergency Services coordinates the response of other agencies, including California EPA, California Highway Patrol, CDFW, RWQCB, SDAPCD, and local fire departments.

California Code of Regulations Title 8, California Occupational Safety and Health Act

In California, Cal/OSHA enforces federal OSHA requirements as well as more stringent state regulations. Cal/OSHA hazardous materials regulations include requirements for safety training, availability of safety equipment, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces hazard communication program regulations, which include identifying and labeling hazardous substances, providing employees with material safety sheets, evacuation procedures, and describing employee training programs.

California Code of Regulations Title 22, California Hazardous Waste Control Law

As previously discussed, DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste under RCRA and the California Hazardous Waste Control Law. Both laws impose "cradle to grave" regulatory systems for handling hazardous waste in a manner that protects human health and the environment. DTSC has delegated some of its authority under the Hazardous Waste Control Law to county health departments and other CUPAs, including the County DEH.

California Occupational Safety and Health Act

In California, under the California Occupational Safety and Health Act, Cal/OSHA enforces federal OSHA requirements as well as more stringent state regulations. Cal/OSHA hazardous materials regulations include requirements for safety training, availability of safety equipment, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces hazard communication program regulations, which include identifying and labeling hazardous substances, providing employees with Material Safety Data Sheets, and describing employee training programs. This would apply to the construction and operation of the proposed pipeline and associated facilities.

3.7.2.3 Local Regulations and Standards

Unified Program Facility Permits

The County of San Diego regulates establishments that use hazardous materials, dispose of hazardous wastes, have underground storage tanks (USTs), and/or generate medical waste. Any business in the county that generates hazardous waste, handles hazardous waste, or uses USTs must apply for a Unified Program Facility Permit and may be subject to various hazardous materials requirements.

Otay Water District Hazardous Materials Business Plan

The District routinely prepares and implements a Hazardous Materials Business Plan (HMBP) at each facility that involves the transportation, storage, use, and disposal of hazardous materials. Implementation of an HMBP typically entails providing appropriate safeguards and related documentation to prevent accidental discharges of hazardous materials (e.g., provision of appropriate storage/containment facilities), as well as identifying provisions for spill containment/clean up and regulatory oversight.

San Diego County Emergency Operations Plan

The County Board of Supervisors adopted the San Diego County Emergency Operations Plan in September 2014. This comprehensive emergency management system provides for a planned response to disaster situations associated with natural disasters, technological incidents, and nuclear defense operations. The plan includes operational concepts relating to various emergency situations, identifies components of the emergency management organization, and describes the overall responsibilities for protecting life and property and ensuring the overall well-being of the population. The plan also identifies the sources of outside support that might be provided (through mutual aid and specific statutory authorities) by other jurisdictions, state and federal agencies, and the private sector.

San Diego County Multi-Jurisdiction Hazard Mitigation Plan

The San Diego County Multi-Jurisdiction Hazard Mitigation Plan was prepared in July 2010 to meet federal and state requirements for disaster preparedness in order to qualify for hazard mitigation funding. The plan is a comprehensive resource document that serves many purposes such as enhancing public awareness, creating a decision tool for management, promoting compliance with state and federal program requirements, enhancing local policies for hazard mitigation, and providing inter-jurisdictional coordination. The plan includes a risk assessment to enable local jurisdictions to identify and prioritize appropriate mitigation actions that would reduce losses from potential hazards, including flooding, earthquakes, fires, and man-made hazards.

3.7.3 Thresholds of Significance

3.7.3.1 CEQA Significance Criteria

Based on the thresholds identified in CEQA Guidelines, Appendix G, hazardous materials effects would be potentially significant if the proposed project would:

- 1) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- 2) Create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- 3) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- 4) Be located on a site which is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.
- 5) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area.
- 6) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.
- 7) Impair implementation of or physically interfere with an adopted emergency plan or emergency evacuation plan.
- 8) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

3.7.3.2 NEPA Considerations

There are no federal significance criteria established for hazards and hazardous materials. The Department evaluates a proposed project consistent with NEPA, however, which identifies and analyzes potential adverse effects to the environment. Therefore, for the purposes of this analysis, the CEQA significance criteria discussed above are used for NEPA considerations as well. In addition, due to the proposed project's location near the United States-Mexico border, and extension of the pipeline into Baja California, Mexico, analysis also included the potential of the proposed pipeline to be exposed to illegal tampering or terrorism.

3.7.4 Applicable Regulatory Measures

As described in Section 3.1.4, implementation of the District's WRMP, as identified in the WRMP PEIR includes PDFs and SCPs to reduce potential environmental effects on hazards and hazardous materials that would result from District projects. The following PDFs and SCPs are relevant to the proposed project:

- Haz-PDF-1 The District will continue to prepare and implement a post-construction HMBP for long-term operations at CIP reservoirs, pump stations, and groundwater wells involving the transportation, storage, use, and disposal of hazardous materials. The procedures in the HMBP will comply with USDOT and CHP regulations for the transportation of hazardous materials along State highways.
- Haz-SCP-1 Prior to construction of CIP projects, the construction contractor will prepare and submit an HMBP to the District. The procedures in the HMBP will comply with USDOT Office of Hazardous Materials Safety as it pertains to the transportation, storage, use, and disposal of hazardous materials and CHP regulations for the transportation of hazardous materials along state highways.
- Haz-SCP-2 In the event that CIP construction activities will require a lane or roadway closure, or could otherwise substantially interfere with traffic circulation, the contractor will obtain a Traffic Control Permit from the local land use agency and/or state agencies such as Caltrans, prior to construction as necessary, and implement a traffic control plan to ensure that adequate emergency access and egress is maintained and that traffic will move efficiently and safely in and around the construction site. The traffic control plan may include, but not be limited to, the following measures:
- Install traffic control signs, cones, flags, flares, lights, and temporary traffic signals in compliance with the requirements of local jurisdictions, and relocate them as the work progresses to maintain effective traffic control.
 - Provide trained and equipped flag persons to regulate traffic flow when construction activities encroach onto traffic lanes.
 - Control parking for construction equipment and worker vehicles to prevent interference with public and private parking spaces, access by emergency vehicles, and owner's operations.
 - Traffic control equipment, devices, and post settings will be removed when no longer required. Any damage caused by equipment installation will be repaired.
- For CIP construction activities near schools, the contractor will coordinate with schools prior to commencement of construction activity to minimize potential disruption of traffic flows during school day peak traffic periods.

3.7.5 Environmental Effects

3.7.5.1 Alternatives 1, 2, and 3

Issues 1 and 2: Routine Transport, Use, or Disposal of Hazardous Materials and Accidental Release of Hazardous Materials

Would implementation of Alternatives 1, 2, or 3, or associated facilities result in a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?

Would implementation of Alternatives 1, 2, or 3, or associated facilities result in the release of hazardous materials into the environment through reasonably foreseeable accident conditions?

The following discussion is separated into construction and operational effects.

Construction

Construction of the proposed project would involve hazardous materials typically used in construction, such as fuel oils, paints, epoxies, etc. Oils and fuel would be used for operation of construction equipment; protective coatings such as paints would be applied to exposed piping and structures including the proposed disinfection facility and metering and pump station; chlorine gas or tablets would be used to disinfect the pipeline for potable water use; chlorinated potable water would be used to flush and clean the proposed pipeline prior to use; and concrete would be used to construct the outfall structure, disinfection facility, metering station, and pump station facilities. The level of chlorine in discharge would remain below 0.019 milligrams per liter (mg/L), in compliance with the SWRCB. None of these materials are considered extremely hazardous and all would be handled in accordance with applicable federal, state, and local laws, which require compliance with the USDOT Title 49 CFR and the CHP Vehicle Code. In addition, compliance with the District's adopted WRMP Haz-SCP-1 would require the construction contractor to prepare and submit an HMBP to the District. The HMBP would comply with the USDOT Office of Hazardous Materials Safety, as it pertains to the transportation, storage, use, and disposal of hazardous materials and CHP regulations for the transportation of hazardous materials along state highways. Therefore, construction of Alternatives 1, 2, or 3, and associated facilities would not have a significant impact to the public or the environment, and effects would be below a level of significance.

Operation

Hazardous materials used during operation of the proposed project would primarily consist of typical cleaning supplies at the pump station, disinfection facility, and metering station that, although considered hazardous, would not result in a hazard to the public or the environment during the course of normal use. In addition, chemical deliveries for the disinfection facility would occur approximately once per week during the winter and twice per week during the summer. Transportation of these chemicals would require compliance with federal, state, and local regulations such as the USDOT Office of Hazardous Materials Safety and the CHP. There would be no hazardous materials generated by the disinfection process.

The operation of the potential pump station and disinfection facility would include the handling, storage, and use of diesel fuel for the emergency power generator. The standby generator would undergo monthly testing for a period of 30 minutes, consistent with the National Fire Protection Agency's Standards for Emergency and Standby Power Systems (2013), which requires a minimum of 30 minutes of testing once a month. A diesel storage tank would be located on the potential pump station and disinfection facility sites to provide fuel for the emergency standby generator. The storage tank would have the appropriate fuel capacity to operate the standby generator for at least 24 hours in the event of a power failure at the pump station or disinfection facility. The tank would be above-ground and constructed with a double-walled spill containment vessel with leak detection monitoring devices, consistent with applicable regulatory requirements.

Fuel would also be recycled once per year through a process called "fuel polishing." This includes running the fuel through a filter to remove excess algae and then recirculating the same fuel back into the tank. In addition to fuel polishing, fuel stabilizer would be added to the fuel to slow the algae growth process. Fuel recycling and stabilization would comply with federal, state, and local standards for the handling and disposal of petroleum hydrocarbons, including registration with the County DEH. Therefore, no significant impact would occur from the handling, storage, and use of diesel fuel for emergency power at the pump station. Compliance with applicable federal, state, and local regulations would reduce the proposed project's potential impact to a less than significant level.

Construction and operation of the proposed pipeline, outfall structure, disinfection facility, metering station, and pump station may entail the use of hazardous substances that would be transported on public roads. The USDOT Office of Hazardous Materials Safety prescribes strict regulations for the transportation of hazardous materials, as described in Title 49 CFR. Transportation along state roadways within or near the proposed project area is also subject to all hazardous materials transportation regulations established by the CHP pursuant to the California Vehicle Code. Compliance with all applicable federal and state laws related to the transport of hazardous materials would minimize the potential for a release and would provide for prompt and effective cleanup if an accidental release were to occur. Therefore, effects related to accidental release due to the transportation, storage, or use of hazardous materials used for construction or operation of the proposed project would be less than significant.

Issue 3: Hazards to Schools

Would implementation of Alternatives 1, 2, or 3, or associated facilities result in activities that emit hazardous emissions or handle hazardous materials within one-quarter mile of an existing or proposed school?

There are no schools within one-quarter mile of the project area. The closest educational facilities are Southwestern College Higher Education Center at Otay Mesa, located approximately three miles west of Paseo de la Fuente, and Olympian High School in Otay Ranch located approximately three miles northwest of Roll Reservoir. At the time of this report, no schools are proposed within the one-quarter mile of the project area. Therefore, the proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. Thus, no impact would occur.

Issue 4: Existing Hazardous Materials Sites

Would implementation of Alternatives 1, 2, or 3, or associated facilities result in activities located on a listed hazardous materials site creating a significant hazard to the public or environment?

According to the Phase I ESA, eight sites with environmental listings are reported present within one mile of the proposed project area. However, all eight sites have either gone through a remediation process and been designated with a “completed, case closed” cleanup status; are at a great enough distance from the proposed project area to result in a low potential impact; or do not pose a threat to human health, the environment, or nearby sensitive receptors. Therefore, the sites would not impact the proposed project. As no listed sites would result in a significant hazard to the public or environment, the implementation of Alternatives 1, 2, or 3, and associated facilities would have less than significant effects.

The proposed project area and adjacent properties were utilized for agricultural purposes from as early as 1953 to as late as 1996. Due to the historical use of areas within the proposed project area for agricultural purposes, there is potential for the project area to be affected with pesticides or other chemicals used routinely in agricultural production. Pesticide and herbicide residue may still be present in soils and, in addition, can migrate during surface runoff in low quantities. This issue will be controlled through standard BMPs that retain and treat runoff on site.

Issues 5 and 6: Public and Private Airport Hazards

For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

The closest public airport is the Brown Field Airport, located approximately 2.5 miles west of the proposed project area (County of San Diego 2010). The proposed project is not located within the Brown Field Airport Land Use Compatibility Plan Airport Influence Area (Ricondo 2010). The airport influence area is the area where airport-related noise, safety, airspace protection, and overflight factors may necessitate restrictions on certain land uses. The closest private airstrip is John Nichol's Field, located approximately 3.3 miles northeast of the proposed project area. Therefore, Alternatives 1, 2, or 3, and associated facilities would not result in a safety hazard associated with hazards from public and private airports. Therefore, no impact would occur.

Issue 7: Emergency Response and Evacuation Plans

Would implementation of Alternatives 1, 2, or 3, or associated facilities impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

As described in Section 3.10, Traffic, lane closures would be required for Alta Road and Paseo de la Fuente during the construction period for Alternatives 1, 2, or 3, and associated facilities. Lane closures would restrict traffic to one-lane roadways, which could affect emergency access by delaying emergency vehicles in the construction area. Therefore, the construction of the proposed project would potentially impact the implementation of an emergency response or evacuation plan, creating a potentially significant impact.

However, prior to construction, a County of San Diego approved traffic control plan would be prepared for the project, consistent with Haz-SCP-2 described in Section 3.7.4 above. The traffic control plan would identify traffic control features required to manage construction activity in the public roadway right-of-way, including barriers, cones, signing, and pavement marking, as appropriate. As recommended in the Traffic Impact Study (TIS) (VRPA 2015), the following requirements would be included in the traffic control plan:

- 1) In the event that one lane of traffic will require closure during construction along Alta Road or Paseo de la Fuente, flaggers shall be required to maintain traffic control during shared-lane operations.
- 2) Due to the relatively higher level of traffic along Alta Road, construction activities along this roadway will be limited to avoid peak traffic hours.
- 3) Due to relatively light levels of traffic along Paseo de la Fuente, construction activity along this roadway will not be restricted during peak traffic hours.
- 4) In cases where a single lane of traffic controlled by a flagger is used, roadways will be restored to normal operating conditions when construction is not taking place.

Compliance with Haz-SCP-2 and the recommendations of the project-specific TIS (VRPA 2015) would reduce the potential for the proposed project to interfere with an adopted emergency response plan or emergency evacuation plan during construction. Effects would be less than significant.

The structures associated with the proposed project would be subject to state and local building and fire codes, and would be reviewed for consistency with the Multi-Jurisdictional Hazard Mitigation Plan, the San Diego County Emergency Operations Plan, and any other applicable plans. Therefore, operation of the proposed project would not impair implementation of an emergency response plan. Effects would be less than significant.

Issue 8: Wildland Fires

Would implementation of Alternatives 1, 2, or 3, or associated facilities expose people or structures to a significant risk of loss, injury or death involving wildland fires?

The proposed pipeline would not be at risk of exposure to wildland fires because it would be located below-ground. However, the proposed above-ground structures would be potentially susceptible to wildland fires. The potential locations of the potential pump station and disinfection facility near Roll Reservoir would be within portions of the project area that are at very high risk for wildfires, which could expose both the facilities and workers to significant loss, injury, or death (County of San Diego 2011a). These structures would be required to implement brush management practices based on a final determination from the County of San Diego Fire Department.

In addition, the County of San Diego is responsible for fire prevention and to provide services such as plan review and construction inspections of new construction in accordance with current California building and fire codes. All applicable fire code and ordinance requirements, including the installation of sprinkler systems, fire-resistant building materials, standard driveway widths, and other features to ensure that buildings are constructed with all reasonable fire safety features, would be fully enforced. These applicable fire codes would reduce fire risk in the proposed project area and at the proposed above-ground structures associated with the project. With implementation of brush management practices and fire safety features, the proposed project's potential wildland fire impact would be less than significant.

Issue 9: Project Security

Would implementation of Alternatives 1, 2, or 3, or associated facilities result in a significant hazard to the public or the environment through a safety breach?

Due to the proposed project's location near the United States-Mexico border, and the extension of the pipeline into Baja California, Mexico, the proposed pipeline would be at increased risk of illegal tampering or terrorism, such as contamination of the potable water within the pipeline. However, water quality would be monitored at the proposed Mexican desalination plant, at various locations along the Mexican conveyance pipeline, and just north of the United States-Mexico border once it enters into the District's system. The water quality monitoring equipment and instruments used to test the water would be calibrated regularly in accordance with the manufacturer's recommendations. The proposed pipeline would be placed underground without public access, therefore deterring illegal tampering or terrorism. In addition, Roll Reservoir is a covered potable water storage facility that is inaccessible to the public. The above-ground facilities associated with the proposed project, including the potential pump station, disinfection facility and meter station, would be surrounded by fencing and include the following security design measures:

- Motion sensitive exterior and interior lighting;
- Exterior beam detectors;
- Alarm contacts at metering vaults, exterior doors, roof openings, and hatches;
- Tamper switches for transom panels and louvers;
- Electronic keypad and panel;
- Internet/network communicator;
- Card readers for exterior gates and doors;
- Exterior door and gate locks;
- Exterior and interior surveillance cameras; and
- Network video recorder

In addition, the pipeline appurtenances like vents, blow-off assemblies, and valves, would be located within locked enclosures and would be physically examined and exercised on a monthly, quarterly, semi-annual, or annual basis, as appropriate. Therefore, effects related to the release of hazardous materials into the water pipeline or facilities due to illegal tampering or terrorism would be less than significant.

3.7.5.2 No Action Alternative

Under the No Action Alternative, no construction, including pipelines or related infrastructure, would occur and the project area would remain in its current condition. Therefore, the No Action - No Project would not result in any effects related to the routine transport, use, or disposal of hazardous materials and accidental release of hazardous materials because no construction would occur. In addition, there would be no effects related to hazards to schools, existing hazardous materials sites, public and private airport hazards, emergency response and evacuation plans, wildland fires, and project security because the proposed project would not be implemented.

3.7.6 Mitigation Measures

Implementation of the proposed project would not result in a significant hazard to the public due to the transport, use, or disposal of hazardous materials, and would not result in the emission or handling of hazardous materials within one-quarter mile of an existing or proposed school, or within two miles of a public or private airport. There is potential for the project area to be affected with pesticides or other chemicals used routinely in agricultural production, due to the historical use of areas within the proposed project area for agricultural purposes. Pesticide and herbicide residue may still be present in soils and in addition can migrate during surface runoff. This represents a potentially significant impact. Implementation of the proposed project would not impair implementation of or physically interfere with an adopted emergency response plan, and would not expose people or structures to loss, injury, or death involving wildland fires. No mitigation measures are required for these issues, however; to mitigate the potentially significant hazardous materials impact associated with previous agricultural use in the proposed project area, the following mitigation measure shall be implemented:

- Haz-1 Prior to of the start of construction, the District shall prepare a soils assessment to the satisfaction of the County DEH to determine if residual pesticides are present within the undeveloped areas of the selected alternative's alignment. The assessment shall be prepared by a Registered Environmental Assessor in accordance with DTSC guidance document. The concentrations of the contaminants shall be compared to DTSC soil screening levels for exposure to construction workers. If levels of contamination exceeding

the DTSC screening levels are found on site, a Soil Reuse Plan shall be prepared prior to construction on site. The Soil Reuse Plan shall include a determination of the suitability of the soils for on-site or off-site reuse, any special handling provisions for construction workers that shall be incorporated as part of the site grading activities, and the procedure for the proper remediation and disposal of the contaminated soils, either on site or off site. The management of potentially contaminated soils will be handled in accordance with applicable federal, state, and local regulations related to the disposal of pesticide-contaminated soils. The results of the soil assessment and the Soil Reuse Plan shall be submitted to the County DEH for review and approval, prior to implementation.

With implementation of mitigation measure Haz-1, effects related to exposure of agricultural pesticides would be less than significant for the proposed project.

3.8 Hydrology/Water Quality

This section analyzes the affected environment of Alternatives 1, 2, and 3, and associated above-ground facilities pertaining to hydrology and water quality. The information presented in this section is based on the Preliminary Geotechnical Evaluation (Geocon 2015a), the Water Quality Evaluation Report (Atkins 2015d), and the Major Stormwater Management Plan (Major SWMP) (Atkins 2014).

3.8.1 Environmental Setting/Affected Environment

3.8.1.1 Hydrologic Setting

The project area is located within the Tijuana and Otay watersheds (also known as hydrologic units [HUs]) (Figure 3.8-1). These HUs are located within the San Diego Region Hydrologic Basin and are bound by the Pacific Ocean on the west and the Anza Borrego HU on the east. The following is a description of the Tijuana and Otay HUs.

Tijuana Hydrologic Unit

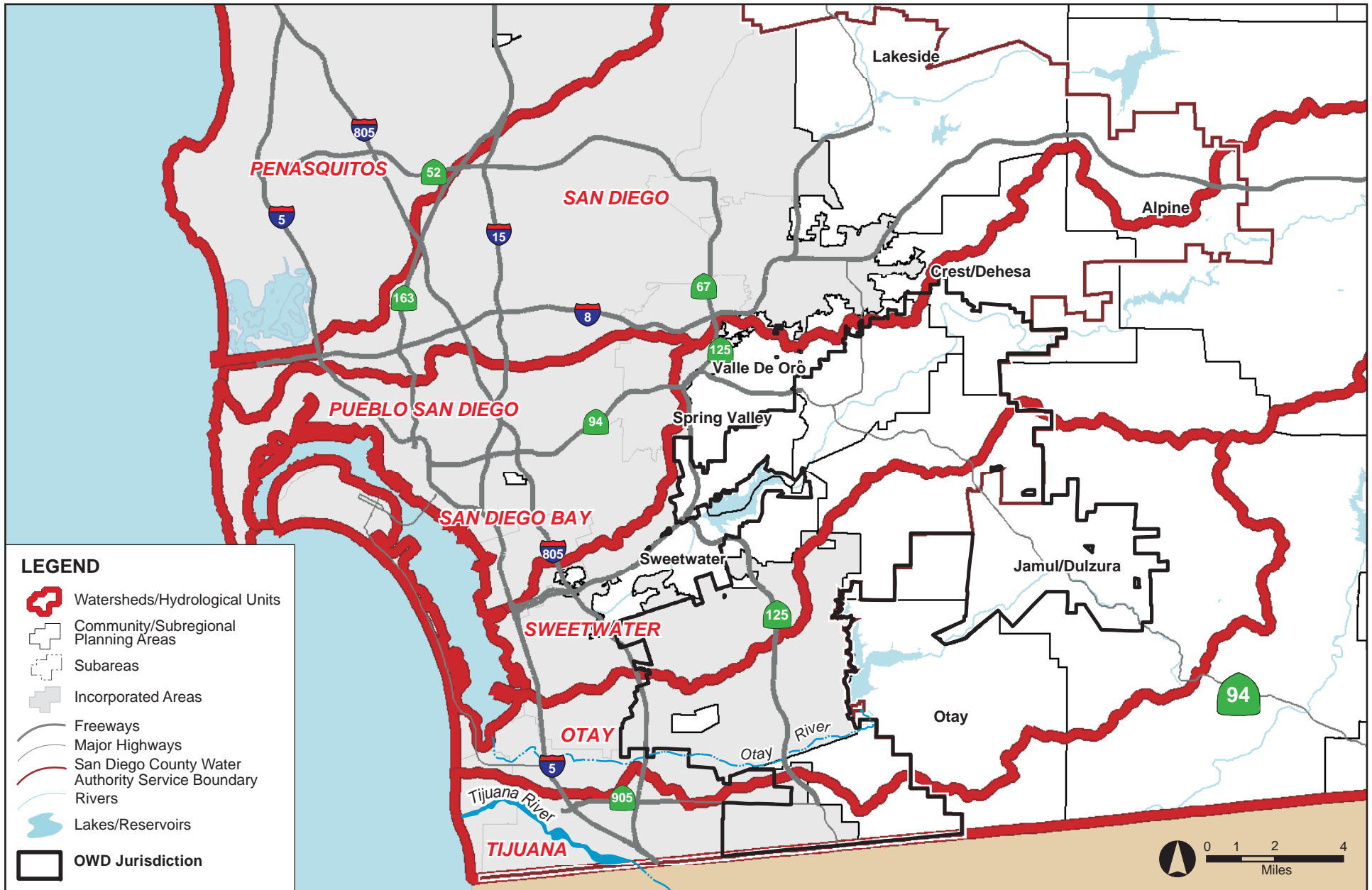
The southernmost portion of the proposed project area is within the Tijuana HU, which drains southwest to the Tijuana River and then discharges into the Pacific Ocean. The Tijuana HU covers approximately 470 square miles, mostly within eastern San Diego County. The Tijuana HU is sparsely populated with the major population centers at San Ysidro and Campo. It is further divided into eight hydrologic areas (HAs): Tijuana Valley, Potrero, Barrett Lake, Monument, Morena, Cottonwood, Cameron, and Campo. Major drainages of this unit include the Cottonwood and Campo Creeks, which are tributaries of the Tijuana River.

The annual average precipitation throughout this unit ranges between 11 inches in the coastal region and more than 25 inches in the inland region. Runoff from this unit discharges to Morena Reservoir, Barrett Lake, or the Pacific Ocean. This unit also contains the Tijuana Estuary, a 2,000-acre salt water marsh that has highly saline conditions and many outlets to the Pacific Ocean. Surface water quality in the estuary is adversely affected by runoff coming across the United States-Mexico border into the United States; ground water quality is affected by seawater intrusion and waste discharges in both the United States and Mexico.

Otay Hydrologic Unit

The northern portion of the proposed project area is located within the Otay HU, which drains northwest to the Otay River and ultimately discharges to San Diego Bay. This unit spans from the Pacific Ocean in the west to central San Diego County in the east, encompassing a total area of approximately 160 square miles. The Otay HU is one of the three county watersheds that discharge to San Diego Bay (County of San Diego 2007b). The watershed consists largely of unincorporated area, but also includes portions of the cities of Chula Vista, Imperial Beach, Coronado, National City, and San Diego. The predominant land uses in the watershed are open space (67%) and urban/residential (20%). The major inland hydrologic features, Upper and Lower Otay Lakes, are two water supply reservoirs that also provide important habitat and recreational opportunities.

The only major drainage feature in this unit is the Otay River, although the HU is also drained by small tributaries of the Otay River. The annual average precipitation throughout this unit ranges between 11 and 19 inches. Runoff from this unit drains primarily into the Lower Otay Reservoir. Approximately



Source: County of San Diego, 2007; SanGIS; CASIL

FIGURE 3.8-1
County Hydrologic Units

100032058

Otay Mesa Conveyance and Disinfection System Project

36 square miles of the watershed is part of the San Diego County MSCP effort that provides habitat for a wide range of endangered plant and animal species. Other important conservation areas within the watershed include the San Diego National Wildlife Refuge, the Rancho Jamul Ecological Reserve, and vernal pool lands in the region. The current population in the Otay River watershed is approximately 150,000 people. From 1998 to 2015, the population within the Otay River watershed increased by 88 percent, substantially increasing the volume of urban runoff within the watershed.

3.8.1.2 Surface Water Quality

Tijuana Hydrologic Unit

The Tijuana HU is classified as a Category I (impaired) watershed by the SWRCB due to a wide variety of water quality problems. These problems are largely a result of non-point agricultural sources on the U.S. side of the border and a variety of point and non-point sources on the Mexican side. The Tijuana Estuary, a National Estuarine Sanctuary supporting a variety of threatened and endangered plants and animals, is threatened by inflows from the Tijuana River containing high concentrations of coliform bacteria; sediment; trace metals (copper, lead, zinc, chromium, nickel, and cadmium); polychlorinated biphenyls (PCBs); and other urban, agricultural, and industrial pollutants.

Otay Hydrologic Unit

The Otay HU is classified as a Category V 303(d) listed watershed by the SWRCB, which represents impaired waters where development of a total maximum daily load (TMDL) is required (SWRCB 2013). At the present time, serious water quality problems in the Otay HU are limited to the presence of elevated coliform bacteria in the Pacific Ocean receiving waters near Coronado. However, an expected increase in population in the future would substantially increase the volume of urban runoff in the watershed, and could significantly alter the present water quality status.

Beneficial Use Designation

A “beneficial use” is defined as a use by which water provides advantages for people and/or wildlife, and therefore can function as a water quality indicator. Table 1 in the Water Quality Evaluation (Atkins 2015d), lists the beneficial uses along with their abbreviations and definitions.

Present or potential beneficial uses of surface waters within the Otay and Tijuana HUs include municipal and domestic supply; agricultural supply; industrial service supply; industrial process supply; contact water recreation; non-contact water recreation; preservation of biological habitats of special significance; warm freshwater habitat; cold freshwater habitat; wildlife habitat; rare, threatened, or endangered habitat; and spawning, reproduction, and/or early development. In addition, the Tijuana HU has a beneficial use for freshwater replenishment (RWQCB 2011).

3.8.1.3 Groundwater Quality

The proposed project area is located within the Otay Valley groundwater basin in southwestern San Diego County. The basin is bounded on the east by the San Ysidro Mountains, on the north and south by semi-permeable marine deposits, and on the west by the Pacific Ocean. Average annual precipitation ranges from 12 inches on the valley floor to 20 inches in the nearby upland areas. Groundwater quality in the basin varies by location but ranges from a sodium chloride character to a sodium-calcium bicarbonate-chloride character (DWR 2004). Concentrations of total dissolved solids (TDS) range from 342 to about 12,000 mg/L throughout the region (SDCWA 1997). Groundwater in the basin is rated marginal to inferior for domestic use in the coastal areas because of high TDS content but is suitable in

the eastern part of the basin (DWR 2004). Water is rated marginal to inferior for irrigation use for most of the basin because of high chloride concentrations (DWR 2004).

3.8.1.4 Urban Runoff

Urban runoff discharged via municipal separate storm sewer systems (MS4s) has been identified as one of the principal causes of water quality problems in most urban areas. The community of Otay Mesa's storm water drainage system, which collects runoff from roads, rooftops, driveways, parking lots, and other impervious areas, flows directly into receiving waters without undergoing treatment. Thus, urban runoff has the potential to discharge pollutants into receiving waters, thereby affecting water quality, associated wildlife, and public health. Potential pollutants contained in urban runoff include sediments, nutrients, metals, organic compounds, trash and debris, oxygen demanding substances, oils and grease, bacteria and viruses, and pesticides. The environmental effects of these pollutants are detailed in the Water Quality Evaluation (Atkins 2015d).

3.8.1.5 Existing Drainage

Under the existing condition, storm water from the project area drains in two directions. The areas within the Tijuana HU flow southwest overland entering Mexico via an unnamed tributary to the Tijuana River. The areas within the Otay HU flow northeast overland entering O'Neal Canyon and continue to flow west into San Diego Bay (Atkins 2014).

3.8.1.6 Flooding

Flood hazards include direct flooding due to overtopping of nearby rivers or streams, or secondary flooding from dam inundation due to seismic activity. According to the County of San Diego General Plan, the project area is not located within a designated 100-year floodplain or a designated dam inundation area (County of San Diego 2011a). Additionally, the Federal Emergency Management Agency (FEMA) has designated the project area as Zone X, which represents areas of 0.2 percent annual chance flood; areas of one percent annual chance flood with average depths of less than one foot or with drainage areas less than one square mile; or areas protected from levees from one percent annual chance flood. The closest mapped 100-year floodplain is located approximately 0.5 mile northwest of the project area along Johnson Canyon Creek.

3.8.2 Regulatory Setting

3.8.2.1 Federal Regulations and Standards

Clean Water Act

The federal CWA established the basic structure for regulating discharges of pollutants into "waters of the U.S." The act specifies a variety of regulatory and non-regulatory tools to sharply reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. Relevant parts of the CWA include Sections 303; Section 401, which is administered by the SWRCB; Section 402; and Section 404. These are described in more detail below and in the Water Quality Evaluation (Atkins 2015d).

Clean Water Act Section 303(d) Impaired Waters List

Under Section 303(d) of the CWA, states are required to develop lists of water bodies that would not attain water quality objectives after implementation of required levels of treatment by point source dischargers (municipalities and industries). Section 303(d) requires that the state develop a TMDL for each of the listed pollutants. The TMDL is the amount of loading that the water body can receive and still be in compliance with water quality objectives. After implementation of the TMDL, remediation of the problems that led to placement of a given pollutant on the Section 303(d) list is anticipated. In California, the RWQCB administers preparation and management of the Section 303(d) list.

Clean Water Act Section 404

Section 404 of the CWA establishes a program to regulate the discharge of dredge and fill material into waters of the U.S., including wetlands. Responsibility for administering and enforcing Section 404 is shared by the USACE and EPA.

Federal Water Pollution Control Act/National Pollutant Discharge Elimination System

The 1972 CWA was designed to restore and maintain the chemical, physical, and biological integrity of the waters of the U.S. The CWA also directs states to establish water quality standards for all waters of the U.S. and to review and update such standards on a triennial basis. The EPA has delegated responsibility for implementation of portions of the federal CWA in California to the SWRCB and to the RWQCBs. This includes water quality control planning and programs such as the NPDES, which seeks to protect water quality through the issuance of permits regulating the discharge of pollutants into waters of the U.S. Section 303 of the CWA requires states to adopt water quality standards for all intrastate waters of the U.S.

Safe Drinking Water Act

Under the Safe Drinking Water Act (SDWA, Public Law 93-523), passed in 1974, the EPA regulates contaminants of concern to domestic water supply. Contaminants of concern relevant to domestic water supply are defined as those that pose a public health threat or that alter the aesthetic acceptability of the water. These types of contaminants are regulated by EPA primary and secondary Maximum Contaminant Levels (MCLs) that are applicable to treated water supplies delivered to the distribution system.

3.8.2.2 State Regulations and Standards

State Water Resources Control Board

Created by the California State Legislature in 1967, the SWRCB holds authority over water resources allocation and water quality protection within the state. As of July 1, 2014, the EPA has delegated to the SWRCB the responsibility for administering California's drinking water program. SWRCB is accountable to EPA for program implementation and for adopting standards and regulations that are at least as stringent as those developed by EPA.

Section 401 of the Clean Water Act

Section 401 of the CWA requires an applicant for any federal permit (such as a Section 404 permit from the USACE) that proposes an activity which may result in a discharge to "waters of the State" obtain certification from the SWRCB, acting through the RWQCB, that the federal permit action meets state

water quality objectives. Section 401 grants the State of California, through the RWQCB, the right to ensure its interests are protected on any federally permitted activity occurring in or adjacent to waters of the State. Therefore, if a proposed project requires a 404 permit and has the potential to impact waters of the State, the RWQCB would regulate the project and associated activities through a Water Quality Certification determination. The USACE would not issue a Section 404 permit until the RWQCB has been notified and the applicant has obtained a Section 401 certification.

Porter-Cologne Water Quality Control Act

Porter-Cologne, enacted in 1969, authorizes the SWRCB to adopt, review, and revise policies for all waters of the State (including both surface and ground waters), and directs the RWQCBs to develop region-specific basin plans. Section 13170 of the California Water Code also authorizes the SWRCB to adopt water quality control plans on its own initiative. The purpose of these plans is to designate beneficial uses of the region's surface and ground waters, designate water quality objectives for the reasonable protection of those uses, and establish an implementation plan to achieve the objectives.

NPDES General Permit for Discharges of Storm Water Associated with Construction Activity

Construction activities disturbing one acre or more of land are subject to the permitting requirements of the NPDES General Construction Activity Permit for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction Permit). To apply for coverage under the General Construction Permit, a project applicant must submit a Notice of Intent for coverage under the General Construction Permit to the RWQCB and the preparation and implementation of a SWPPP prior to initiating construction activities. Implementation of the SWPPP continues through the completion of the project when an applicant must submit a Notice of Termination to the RWQCB notifying the agency that construction is completed. The disturbance to areas associated with construction of structures and facilities for the project would require coverage under a General Construction Permit.

California Water Code, Groundwater Management Act

California Water Code, Division 6, Part 2.75, Chapters 1–5, Sections 10750 through 10755.4 establish the Groundwater Management Act, which was enacted in 1992 as AB 3030. The intent of the Groundwater Management Act is to encourage local agencies to work cooperatively to manage groundwater resources within their jurisdictions and to provide a methodology for developing a Groundwater Management Plan.

Sustainable Groundwater Management Act

On September 16, 2014, Governor Jerry Brown signed into law a three-bill legislative package, comprising AB 1739 (Dickinson), Senate Bill (SB) 1168 (Pavley), and SB 1319 (Pavley), collectively known as the Sustainable Groundwater Management Act (SGMA). The SGMA provides a framework for sustainable management of groundwater supplies by local authorities, with a limited role for state intervention only if necessary to protect the resource (ACWA 2015). The SGMA requires the formation of local groundwater sustainability agencies (GSAs) that must assess conditions in their local water basins and adopt locally based management plans. The act provides a 20-year timeline for the GSAs to implement the plans in order to achieve long-term groundwater sustainability. Further, the act protects existing surface water and groundwater rights and does not interfere with current drought response measures.

3.8.2.3 Local Regulations and Standards

San Diego Regional Water Quality Control Board

The proposed project area is located within the jurisdiction of the San Diego RWQCB. As authorized by Porter-Cologne, the RWQCB's primary function is to protect the quality of the waters within its jurisdiction, including the proposed project area, for all beneficial uses. State law defines beneficial uses of California's waters that may be protected against quality degradation to include, but not be limited to, domestic; municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.

The RWQCB implements water quality protection measures by formulating and adopting water quality control plans (referred to as basin plans, as discussed below) for specific groundwater and surface water basins, and by prescribing and enforcing requirements on all agricultural, domestic, and industrial waste discharges.

San Diego Basin Plan

The San Diego Basin Plan (SDBP), adopted in 1994 and most recently amended in 2011, sets forth water quality objectives for constituents that could potentially cause an adverse effect or impact on the beneficial uses of water. Specifically, the SDBP is designed to accomplish the following: (1) designate beneficial uses for surface and ground waters; (2) set the narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the California's anti-degradation policy; (3) describe implementation programs to protect the beneficial uses of all waters within the region; and, (4) describe surveillance and monitoring activities to evaluate the effectiveness of the SDBP. The SDBP incorporates by reference all applicable SWRCB and RWQCB plans and policies.

3.8.3 Thresholds of Significance

3.8.3.1 CEQA Significance Criteria

Thresholds used to evaluate potential hydrology and water quality effects are based on applicable criteria in Appendix G of the CEQA Guidelines. A significant impact occurs if the proposed project would:

- 1) Violate any water quality standards or waste discharge requirements;
- 2) Substantially degrade water quality;
- 3) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a new deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);
- 4) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off site;
- 5) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site;

- 6) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff;
- 7) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- 8) Place within a 100-year flood hazard area structures which would impede or redirect flood flows;
- 9) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- 10) Inundation by seiche, tsunami, or mudflow.

3.8.3.2 NEPA Considerations

The Department considers, through its NEPA review, whether the proposed action, if approved, would be consistent with the federal laws and regulations discussed above, in particular the relevant sections of the CWA. There are no federal significance criteria established for hydrology and water quality. However, NEPA reviews identify and analyze effects that could result in an adverse effect to the environment. Therefore, for the purpose of this analysis, the CEQA significance criteria listed above have been used for NEPA considerations as well.

3.8.4 Applicable Regulatory Measures

As described in Section 3.1.4, implementation of the District's WRMP, as identified in the WRMP PEIR, includes PDFs and SCPs to reduce potential environmental effects associated with water quality from District projects. These PDFs and SCPs are identified by environmental topic in the Program EIR prepared for the WRMP. The following PDFs and SCPs are applicable to the proposed project:

- Geo-SCP-2 Prior to construction of CIP projects, areas of severely erodible soils will be identified as part of site-specific geotechnical investigations. The investigations will specifically address foundation and slope stability in erodible soils proposed for construction. Recommendations made in conjunction with the geotechnical investigations will be implemented during construction, including but not limited to the following actions:
- Minimize disturbance to existing vegetation and slopes.
 - Construct drainage control devices (e.g., storm drains, brow ditches, subdrains, etc.) to direct surface water runoff away from slopes and other graded areas.
 - Provide temporary hydroseeding of cleared vegetation and graded slopes as soon as possible following grading activities for areas that will remain in disturbed condition (but will not be subject to further construction activities) for a period greater than two weeks during the construction phase.
- Geo-SCP-3 The construction bid documents for each CIP project will include either an Erosion Control Plan (for projects that would result in less than one acre of land disturbance) or a SWPPP (for projects that would result in one acre or greater of land disturbance). The Erosion Control Plan or SWPPP will be prepared at no later than the 90% design submittal. The Erosion Control Plan will comply with the storm water regulations or ordinances of the local agency jurisdiction within which the CIP project occurs, while the

SWPPP will comply with the NPDES General Construction Permit. These plans will be based on site-specific hydraulic and hydrologic characteristics, and identify a range of Best Management Practices (BMPs) to reduce effects related to storm water runoff, including sedimentation BMPs to control soil erosion. The construction contractor will identify the specific storm water BMPs to be implemented during the construction phase of a given CIP project, and will prepare and implement the final Erosion Control Plan or SWPPP for that project. Typical BMPs to be implemented as part of the Erosion Control Plan or SWPPP may include, but not be limited to, the actions listed below. For protection of finished graded areas and manufactured slopes, the construction contractor will implement the OWD Standard Specifications for Slope Protection and Erosion Control (Section 02202).

- Implement a “weather triggered” action plan during the rainy season involving installation of enhanced erosion and sediment control measures prior to predicted storm events (i.e., 40 percent or greater chance of rain).
- Use erosion control/stabilizing measures in cleared areas and on graded slopes of 3:1 (horizontal to vertical) gradient or steeper, such as geotextiles, mats, fiber rolls, soil binders, or temporary hydroseeding.
- Use sediment controls to protect the site perimeter and prevent off-site sediment transport, such as filtration devices (e.g., temporary inlet filters), silt fences, fiber rolls, gravel bags, temporary sediment basins, check dams, street sweeping, energy dissipaters, stabilized construction access points (e.g., temporary gravel or pavement) and sediment stockpiles (e.g., silt fences and tarps), and properly fitted covers for sediment transport vehicles.
- Divert runoff from uphill areas around disturbed areas of the construction site.
- Protect storm drain inlets on site or downstream of the construction site to eliminate entry of sediment.
- Store BMP materials in on-site areas to provide “standby” capacity adequate to provide complete protection of exposed areas and prevent off-site sediment transport.
- Train personnel responsible for BMP installation and maintenance.
- Implement solid waste management efforts such as proper containment and disposal of construction debris.
- Install permanent landscaping (or native vegetation in areas adjacent to natural habitats) and irrigation as soon as feasible after final grading or construction.
- Implement appropriate monitoring and maintenance efforts (e.g., prior to and after storm events) to ensure proper BMP function and efficiency.
- Implement sampling/analysis, monitoring/reporting and post-construction management programs per NPDES requirements.
- Implement additional BMPs as necessary (and as required by appropriate regulatory agencies) to ensure adequate erosion and sediment control.

Hyd-SCP-1 In accordance with the Water Agencies Standards (WAS), the construction contractor is required to implement a Safety Plan at each CIP construction site that would involve the

transport, storage, use, and disposal of hazardous materials. Such plans will also specify storm water BMPs, to be consistent with those identified in Geo-SCP-3, to minimize downstream water quality degradation from runoff pollution associated with CIP construction activities.

Hyd-PDF-1 For each CIP facility that would involve the transport, storage, use, and disposal of hazardous materials during project operation, OWD will implement a site-specific HMBP, including BMPs to prevent downstream water quality degradation from runoff pollution associated with CIP post-construction operations. In addition, OWD is required to obtain a permit from the County DEH allowing for the use of specified hazardous substances during the CIP post-construction operation of these sites (refer to Section 3.7, Hazards and Hazardous Materials, of this Draft EIR/EIS). Typical BMPs to be implemented as part of the HMBP may include, but are not limited to, the actions listed below.

Construction and operation of the proposed project would be required to comply with all applicable state and federal water quality regulations in addition to the adopted measures as part of the WRMP Program EIR. Consistency with these regulations is addressed in the following analysis.

3.8.5 Environmental Effects

3.8.5.1 Alternatives 1, 2, and 3

Issues 1 and 2: Water Quality Standards

Would implementation of Alternatives 1, 2, or 3, or associated facilities violate any water quality standards or waste discharge requirements?

Would implementation of Alternatives 1, 2, or 3, or associated facilities otherwise substantially degrade water quality?

Surface Water Quality

Construction

The proposed project would result in sources of polluted runoff during construction that would have short-term effects on surface water and ground water quality through activities such as clearing and grading, excavation of undocumented soils, stockpiling of soils and materials, installation of pipeline, concrete pouring, and painting. Construction activities would involve various types of equipment such as excavator, loaders, dump trucks, water truck, air compressor, welding trucks, and a lubrication service vehicle. Additionally, soils and construction materials are typically stockpiled outdoors.

Storm water pollutants associated with construction activities for Alternatives 1, 2, or 3 could include, but are not limited to, sediments, oil and grease, and organic compounds. Water quality standards and waste discharge requirements that would be applicable for all project alternatives are set forth by the SWRCB and/or the RWQCB. As described in Geo-SCP-2 and Geo-SCP-3, the construction contractor for the proposed project would be required to implement construction and post-construction BMPs in accordance with a SWPPP because proposed project effects would be greater than one acre in size, pursuant to the NPDES General Construction Permit. In addition, as described in Hyd-SCP-1, prior to grading, the construction contractor would be required to submit and implement a Safety Plan. This plan would also identify construction BMPs to reduce effects to surface water quality due to storm water

runoff pollution from the construction area including, but not limited to, erosion control/stabilizing measures in cleared areas and on graded slopes (e.g., geotextiles, mats, fiber rolls, soil binders, temporary hydroseeding); sediment controls (e.g., temporary inlet filters, silt fences, fiber rolls, gravel bags, temporary sediment basins, check dams, street sweeping, energy dissipaters); and stabilized construction access points (e.g., temporary gravel or pavement) and sediment stockpiles (e.g., silt fences and tarps). Therefore, implementation of Geo-SCP-2, Geo-SCP-3, and Hyd-SCP-1 would reduce effects associated with potential violations of water quality standards or waste discharge requirements resulting from construction of Alternatives 1, 2, or 3 to a less than significant level.

Operation

Potential storm water pollutants associated with operation and maintenance of Alternative 1, 2, or 3 could include, but are not limited to, sediment discharges, heavy metals, organic compounds, trash and debris, oxygen demanding substances, oil and grease, bacteria and viruses, and pesticides from landscaping. Long-term operations may involve the transport, storage, use, and disposal of hazardous materials including chemicals for the potential disinfection facility; however, the District would prepare and implement an HMBP and obtain and comply with a County DEH permit, as described in Hyd-PDF-1 above. The HMBP would identify post-construction BMPs to reduce potential effects to surface water quality due to storm water runoff pollution from developed sites including, but not limited to, containment of chemical spills (e.g., absorbent, physical barriers, or other methods) by trained employees using proper protective equipment and disposal of waste in a properly labeled container; and notification of emergency response agencies for major chemical spills. Therefore, implementation of Hyd-PDF-1 would reduce effects associated with potential violations of water quality standards or waste discharge requirements resulting from operation of Alternatives 1, 2, or 3 to a less than significant level.

Groundwater Quality

Construction

The proposed project is located within the Otay Valley groundwater basin. Pollutants generated by construction activities for Alternative 1, 2 or 3 could potentially be carried in runoff that may drain off site and percolate into the groundwater basin. Storm water pollutants associated with construction activities could include, but are not limited to, sediments, oil and grease, and organic compounds. However, implementation of Geo-SCP-3 and Hyd-SCP-1 would require measures, such as implementing waste management efforts to clean up chemicals and debris from construction areas and implementing a “weather triggered” action plan during the rainy season involving installation of enhanced erosion and sediment control measures prior to predicted storm events (i.e., 40 percent or greater chance of rain), that would reduce potential groundwater quality effects as a result of polluted storm water runoff occurring during construction of Alternatives 1, 2, or 3 to less than significant.

Operation

Following construction for all project alternatives, pollutants generated by development and operational activities could potentially be carried in runoff that may drain off site and percolate into the nearby groundwater basins. Such storm water pollutants could include, but are not limited to, sediment discharges, heavy metals, organic compounds, trash and debris, oxygen demanding substances, oil and grease, bacteria and viruses, and pesticides from landscaping. However, implementation of Geo-SCP-2 and Hyd-PDF-1 would require measures, such as installing permanent landscaping (or native vegetation in areas adjacent to natural habitats) and irrigation as soon as feasible after final grading or

construction, that would reduce potential groundwater quality effects due to storm water runoff pollution associated with operation of Alternatives 1, 2, or 3 to less than significant.

Summary

With implementation of applicable SCPs and PDFs, the proposed project would not result in a violation of any water quality standards or waste discharge requirements or otherwise substantially degrade water quality associated with the construction and/or operation of the proposed facilities. Therefore, water quality violations associated with Alternatives 1, 2, 3 or associated facilities would be less than significant.

Issue 3: Groundwater Supplies and Recharge

Would implementation of Alternatives 1, 2, or 3, or associated facilities substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

The proposed project is located within the Otay Valley groundwater basin. Analysis in the Geotechnical Evaluation (Geocon 2015a) indicates that the regional groundwater level is anticipated to be greater than 100 feet below site grade. While groundwater levels are anticipated at great depths below the surface, the project area could potentially experience periodical perched groundwater associated with heavy rainfall events. Additionally, groundwater elevations are dependent on seasonal precipitation, irrigation, and land use and, as such, vary over time.

Under the existing condition, a large portion of the proposed project area is undeveloped and pervious and does not contain any active groundwater wells. The portion of the project area that is developed is within existing paved roadways. The proposed project does not propose to use groundwater during construction or operation. Due to the nature of the proposed project, the majority of the pipeline alignment would return to pre-project conditions after construction because the pipeline itself would be underground. The exception would be the extension of Lone Star Road, which the proposed project would grade and improve to its ultimate elevation. However, the effects of that portion of the project have already been evaluated in the Otay Crossings Commerce Park Supplemental EIR, adopted by the County of San Diego in May 2010 (Helix 2010). The above-ground associated facilities (meter station, potential pump station, disinfection facility, and outfall structure) would have relatively small building footprints, approximately 1.1 acre in total. Therefore, implementation of the proposed project would not convert a substantial amount of pervious land to impervious and, as such, would not substantially deplete groundwater recharge or supply. Effects associated with groundwater recharge and supply would be less than significant.

Issues 4, 5, and 6: Drainage Alterations

Would implementation of Alternatives 1, 2, or 3, or associated facilities substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on or off site?

Would implementation of Alternatives 1, 2, or 3, or associated facilities substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off the site?

Would implementation of Alternatives 1, 2, or 3, or associated facilities create or contribute runoff water, which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

Construction

Construction of the proposed project would temporarily alter the localized drainage pattern in the project area due to ground-disturbing activities such as grading and excavation. Such alterations in the drainage pattern may temporarily result in erosion or siltation and may temporarily increase the rate or amount of surface runoff if substantial drainage is rerouted. This represents a potentially significant impact related to erosion or siltation and increased rate of surface runoff. However, as described in Section 3.5.4 above, the District's WRMP includes Geo-SCP-2, Geo-SCP-3, and Hyd-SCP-1 associated with hydrology and water quality, which are applicable to the proposed project. Construction activities would be required to comply with the applicable WRMP's SCPs, which consist of, but are not limited to, the preparation and implementation of a SWPPP; construction BMPs to reduce effects related to storm water runoff, including sedimentation BMPs to control soil erosion; diversion of runoff from uphill areas around disturbed areas of the construction site; protection of storm drain inlets or downstream of the construction site to eliminate entry of sediment; and implementation of routine sampling, monitoring, and maintenance to ensure proper BMP function and efficiency. Thus, implementation of construction BMPs would minimize the potential for erosion and siltation and would control surface runoff such that flooding would not occur and off-site flows would maintain pre-project conditions, such that runoff discharge would not increase to receiving waters. Construction BMPs would also minimize the discharge of polluted runoff from the project area. Therefore, construction effects associated with drainage alterations would be less than significant.

Operation

Portions of the proposed project area are located within existing natural and manmade drainage courses. Although direct alterations to drainages are not proposed, implementation of Alternative 1, 2, or 3 would grade and elevate the future Lone Star Road to specifications to be paved at a later time by a future developer. The future extension of Lone Star Road would be covered with a gravel surface treatment. The elevation of the future Lone Star Road represents topographical modifications, which may result in permanent increases in the rate or amount of surface runoff discharging, which could represent additional pollutant sources, including erosion and downstream siltation (Atkins 2015d). If the rate or amount of surface water discharging off site were to increase, then the potential for polluted runoff would also increase. This represents a potentially significant impact.

Although construction of the unimproved future Lone Star Road would alter the topography, the surface treatment of gravel would mimic the existing conditions as related to infiltration of storm water. Therefore, a hydromodification analysis was not performed as infiltration rates would remain the same as the existing condition and the rate or amount of surface runoff would not increase (Atkins 2015d). In addition, implementation of Geo-SCP-3 would require the construction contractor to implement post-construction BMPs in accordance with a SWPPP, pursuant to the NPDES General Construction Permit. Implementation of these measures would reduce effects associated with storm water runoff pollution, including erosion and excess siltation, from operation of Alternative 1, 2, or 3 to a less than significant level.

In the very rare instance where non-spec water is discharged into the O'Neal Canyon drainage via the outfall structure, the flow will be controlled to prevent any adverse impacts resulting from water flows. The regulating valve will only allow discharge at a rate that emulates flows during a typical storm event.

Energy dissipaters will be installed on the existing concrete apron at the downstream end of the culverts to slow flow rates. These methods will prevent erosion in the stream channel.

Issues 7 and 8: 100-Year Flood Hazards

Would implementation of Alternatives 1, 2, or 3, or associated facilities place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

Would implementation of Alternatives 1, 2, or 3, or associated facilities place structures within a 100-year flood hazard area which would impede or redirect flood flows?

According to the FEMA federal insurance rate map (FIRM) No. 06073C2183G, the project area is located in Zone X, which is areas designated as having a 0.2 percent annual chance flood; areas of one percent annual chance flood with average depths of one foot or with drainage areas less than one square mile; and areas protected by levees from one percent annual chance flood (FEMA 2012). In addition, the proposed project does not propose housing units as part of the project. Therefore, the project area is not located within the 100-year floodplain and, as such, would not place housing within the 100-year hazard zone. While the proposed project would develop an underground pipeline and associated above-ground facilities, the project area is not located within the 100-year floodplain. Therefore, implementation of the proposed project would not develop structures that would impede or redirect flood flows. Effects associated with placing housing or structures in the 100-year floodplain would be less than significant.

Issues 9 and 10: Flooding and Inundation

Would implementation of Alternatives 1, 2, or 3, or associated facilities expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

Would implementation of Alternatives 1, 2, or 3, or associated facilities result in a substantial increase in risk of exposure to inundation by seiche, tsunami, or mudflow?

According to the San Diego County General Plan Safety Element (County of San Diego 2011a), the proposed project area is not located within a dam inundation area as the nearest dam, at Lower Otay Reservoir, is located approximately 2.5 miles northwest of the project area. In addition, implementation of the proposed project would construct an underground pipeline and associated above-ground facilities; no residential uses are proposed as part of the project. Therefore, effects associated with flooding as a result of the failure of a levee or dam would be less than significant.

A seiche is a wave on the surface of a lake or landlocked bay that is caused by atmospheric or seismic disturbances. The potential of a seiche to occur is considered very low due to the topography and relative distance between the project area and the nearest inland body of water, which is the Lower Otay Reservoir. Therefore, effects associated with exposure to inundation by a seiche are less than significant.

A tsunami is a very large ocean wave caused by an underwater earthquake or volcanic eruption. The potential for tsunamis to occur at the project area is considered very low due to the project site being located approximately 13 miles east from the coastline (Geocon 2015a). Therefore, effects associated with tsunamis would be less than significant.

Mudflows are shallow water-saturated landslides that travel rapidly down slopes carrying rocks, brush, and other debris. Typically, mudflows occur during or soon after periods of heavy rainfall on slopes that contain loose soil or debris. The preliminary geotechnical report prepared for the proposed project (Geocon 2015a), encountered no landslides that may result in mudflows during site reconnaissance and no landslide sites are known to exist in the project area. In addition, the project area is relatively flat; therefore, the potential for mudflows is considered to be very low. Effects associated with mudflows would be less than significant.

3.8.5.2 No Action Alternative

Under the No Action Alternative, no construction, including pipelines or related infrastructure, would occur and the project area would remain in its current condition. Therefore, the No Action – No Project would not result in any effects related to water quality standards, groundwater supplies and recharge, drainage alterations, 100-year flood hazards, and flooding and inundation because no construction would occur.

3.8.6 Mitigation Measures

Effects related to water quality standards, groundwater supplies and recharge, drainage alterations, flood hazards, and flooding and inundation would be less than significant. No mitigation measures are required.

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3.9 Noise

This section analyzes the affected environment of Alternatives 1, 2, and 3, and associated facilities related to temporary and permanent increases in noise from construction and operation. Section 3.2, Biological Resources, of this Draft EIR/EIS includes a discussion of potential noise effects to sensitive species. The information in this section is based on the Noise and Vibration Technical Report (Atkins 2015c).

3.9.1 Environmental Setting/Affected Environment

3.9.1.1 Environmental Noise Terminology

The following section provides an overview of the terminology used in this analysis. Additional detail regarding the fundamentals of environmental noise is provided in the Noise and Vibration Technical Report (Atkins 2015c).

Noise is commonly defined as unwanted sound. Noise level values are expressed in terms of decibels with A-weighting (dBA), which approximate the hearing sensitivity of humans. For comparison, the noise level in a library is typically near 30 dBA, while the sound level of a rock concert may be 110 dBA (Caltrans 1998).

The most commonly used indices for measuring community noise levels are L_{eq} and CNEL. Time averaged noise levels are expressed as the Equivalent Sound Level (L_{eq}), which is the average acoustical or sound energy content of noise, measured during a prescribed period, such as 1 minute, 1 hour, or 8 hours. L_{eq} is the decibel sound level that contains an equal amount of energy as a fluctuating sound level over a given period of time. CNEL is the Community Noise Equivalent Level, which is the average equivalent A-weighted sound level over a 24-hour period. This measurement applies weights to noise levels during evening and nighttime hours to compensate for the increased disturbance response of people at those times.

3.9.1.2 Environmental Vibration Terminology

Vibration consists of waves transmitted through solid material. Ground-borne vibration propagates from the source through the ground to adjacent buildings and other solid objects by surface waves. Vibration may be composed of a single pulse, a series of pulses, or a continuous oscillatory motion. The frequency of a vibrating object describes how rapidly it is oscillating, measured in Hertz (Hz). The normal frequency range of most ground-borne vibration that can be felt generally starts from a low frequency of less than 1 Hz to a high of about 200 Hz.

Vibration energy spreads out as it travels through the ground, causing the vibration amplitude to decrease with distance away from the source. Ambient and source vibration are often expressed in terms of the peak particle velocity (PPV) in inches per second (in/sec) that correlates best with human perception. Caltrans estimates that the threshold of perception for continuous vibration is approximately 0.006 in/sec PPV and the level at which continuous vibrations begins to annoy people is approximately 0.1 in/sec PPV (Caltrans 2004). The ground motion caused by vibration is also given in decibel notation, referenced as vibration decibels (VdB), which serves to compress the range of numbers required to describe vibration relative to human response.

3.9.1.3 Existing Noise Conditions

Ambient Noise Environment

On January 29, 2013, Ascent Environmental conducted a daytime (9:00 a.m. to 11:30 a.m.) ambient noise level survey in support of the Draft EIR for an expansion project at the Richard J. Donovan Correctional Facility, which is located in proximity to Alta Road adjacent to the proposed Alternatives 1, 2, and 3 (Ascent Environmental, Inc. 2013). Noise measurements were one hour in duration. Measured on-site hourly noise levels at the facility and proposed expansion project area ranged from 50 dBA to 55 dBA L_{eq} . An off-site measurement along Otay Mesa Road west of Enrico Fermi Drive measured an existing noise level of 61 dBA L_{eq} . Noise levels along Alta Road southeast of the existing facility were measured at 57 dBA L_{eq} . The primary noise sources influencing noise measurement locations were vehicular traffic on Otay Mesa Road and construction activities adjacent to Alta Road. Existing noise sources that affect the project area are described in greater detail below.

Operational Noise Sources

The southern portion of the project area is currently undeveloped, with the exception of a series of dirt roads used by the U.S. Border Patrol for domestic security purposes. The northern portion of the project area is characterized by paved roadways and facilities including the Otay Mesa Detention Facility, Richard J. Donovan Correctional Facility, and George F. Bailey Detention Facility. Noise sources from the correctional and detention facilities include activity in outdoor areas, use of the public address systems, operation of mechanical systems, parking lot noise, and use of firing ranges. An auto storage, wrecking, and recycling facility that generates operational noise from use of heavy equipment for wrecking and recycling is located at the southwest corner of Alta Road and Otay Mesa Road. The Otay Mesa Energy Center is located along Paseo de la Fuente and also generates noise from the use of equipment to generate power and operate the plant, such as turbine generators.

Transportation Noise Sources

Aviation

Two airports, Brown Field and the Tijuana International Airport, are located in the project area. Brown Field is a general aviation airport located in the city of San Diego, approximately 2.75 miles west of the proposed pipeline alignments. Although the project area may be exposed to overflights from Brown Field, the proposed pipeline alignments are not located within any noise contour for the airport (SDCRAA 2010). As such, noise levels from airport operations are not anticipated to exceed 60 dBA in the project area. The Tijuana International Airport is located in Tijuana, Mexico, approximately two miles southwest of the proposed pipeline alignments. Aircraft noise from the airport primarily affects the area adjacent to the United States-Mexico border. Therefore, a portion of the proposed pipeline alignments is exposed to aircraft noise from Tijuana Airport. The entire project area is subject to aircraft overflights. The U.S. Border Patrol also flies helicopters above the project area, which intermittently contribute to the existing noise environment.

Roadway

The main roadways in the project area include Otay Mesa Road, Alta Road, and Donovan State Prison Road. The noise study prepared in support of the Draft EIR for the expansion project at the Richard J. Donovan Correctional Facility modeled existing traffic noise levels on these roadways in the project vicinity (CDCR 2013). The study modeled traffic noise on Otay Mesa Road, from Enrico Fermi Drive to Alta Drive, at 64 dBA CNEL at 100 feet from the roadway centerline. The study also modeled traffic noise

on Donovan State Prison Road at 50 dBA CNEL at 100 feet from the roadway centerline. The model indicated traffic noise on Alta Road, from Paseo de la Fuente to Donovan State Prison Road, at a level of 64 dBA CNEL at 100 feet from the roadway centerline.

Railroad

The project site is not served by a railroad line and the closest rail line is the San Diego and Arizona Eastern Railway, located approximately 6.5 miles south of the southern terminus of the proposed pipeline alignments. Due to distance and intervening roadways and development, railroad noise is not audible in the project area.

3.9.1.4 Noise-Sensitive Land Uses

The County of San Diego defines noise-sensitive land uses (NSLU) as any residence, hospital, school, hotel, resort, library, or similar facility where quiet is an important attribute of the environment (County of San Diego 2009b). A noise-sensitive receptor is an individual noise receptor located in a noise-sensitive area. The existing noise-sensitive receptors closest to the project area include the following:

- 1) San Diego Correctional Facility and Otay Mesa Detention Facility, approximately 0.2 mile (1,100 feet) southeast of Roll Reservoir;
- 2) Richard J. Donovan Correctional Facility, approximately 0.2 mile (1,100 feet) west of Alta Road;
- 3) George F. Bailey Detention Facility, approximately 0.3 mile (1,600 feet) east of Alta Road; and
- 4) Residences on Otay Mesa Road, approximately 0.75 mile (4,100 feet) west of Alta Road.

The correctional and detention facilities are considered noise sensitive because they include housing for inmates. New facilities are proposed at the Richard J. Donovan Correctional Facility, including new bed towers. The proposed improvement area is located approximately 900 feet east of the intersection of Donovan State Prison Road and Alta Road. Once constructed, the new bed towers would also be considered a sensitive receptor.

3.9.1.5 Vibration-Sensitive Land Uses

Vibration-sensitive land uses include buildings and other solid objects where vibration would interfere with operations within the building, such as vibration-sensitive research and manufacturing, hospitals with vibration-sensitive equipment, and university research operations. The degree of sensitivity to vibration depends on the specific equipment that would be affected by the vibration. Medical care facilities at the detention facilities listed above could include vibration-sensitive equipment. Residential uses along Otay Mesa Road may also be sensitive to excessive levels of vibration of either a regular or intermittent nature. Future development in the project area includes the Otay Crossing Commerce Park and Otay Business Park, which are planned for industrial development. These developments may include manufacturing or other uses that would include vibration-sensitive equipment. Once occupied, these developments may be considered vibration sensitive.

3.9.2 Regulatory Setting

3.9.2.1 Federal Regulations and Standards

Federal Noise Control Act

The Noise Control Act of 1972 establishes a national policy to promote an environment for all Americans free from noise that jeopardizes their health and welfare. Section 42 U.S.C. 4903, Federal Programs, states that federal agency activities that may result in emission of noise shall comply with applicable federal, state, interstate, and local requirements related to control and abatement of environmental noise. Additionally, the Noise Control Act states that it is the primary responsibility of state and local governments to control noise.

Federal Aviation Administration Standards

Enforced by the Federal Aviation Administration (FAA), CFR Title 14, Part 150 prescribes the procedures, standards, and methodology governing the development, submission, and review of airport noise exposure maps and airport noise compatibility programs, including the process for evaluating and approving or disapproving those programs. Title 14 also identifies those land uses that are normally compatible with various levels of exposure to noise by individuals.

Federal Highway Administration Standards

CFR Title 23, Part 772 sets procedures for the abatement of highway traffic noise and construction noise. Title 23 is implemented by the FHWA. The purpose of this regulation is to provide procedures for noise studies and noise abatement measures to help protect the public health and welfare, to supply noise abatement criteria, and to establish requirements for information to be given to local officials for use in the planning and design of highways.

Federal Transit Administration and Federal Railroad Administration Standards

Although the Federal Transit Administration (FTA) standards are intended for federally funded mass transit projects, the impact assessment procedures and criteria included in the FTA Transit Noise and Vibration Impact Assessment Manual (FTA 2006) are routinely used for projects proposed by local jurisdictions. The FTA and Federal Railroad Administration have published guidelines for assessing the effects of groundborne vibration associated with rail projects, which have been applied by other jurisdictions to other types of projects. The vibration criteria established by the FTA in the Transit Noise Impact and Vibration Assessment are provided in Table 3.9-1.

Table 3.9-1 FTA Groundborne Vibration Impact Criteria

Land Use Category	Impact Levels (VdB)		
	Frequent Events ⁽¹⁾	Occasional Events ⁽²⁾	Infrequent Events ⁽³⁾
Category 1: Buildings where vibration would interfere with interior operations	65	65	65
Category 2: Residences and buildings where people normally sleep	72	75	80
Category 3: Institutional land uses with primarily daytime uses	75	78	83

Vibration levels are measured in or near the vibration-sensitive use.

(1) "Frequent Events" is defined as more than 70 vibration events of the same source per day.

(2) "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day.

(3) "Infrequent Events" is defined as fewer than 30 vibration events of the same source per day.

Source: FTA 2006

3.9.2.2 State Regulations and Standards

California Noise Control Act of 1973

Sections 46000 through 46080 of the California Health and Safety Code, known as the California Noise Control Act of 1973, finds that excessive noise is a serious hazard to the public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. It is the policy of the state to provide an environment for all Californians free from noise that jeopardizes their health or welfare.

3.9.2.3 Local Regulations and Standards

County of San Diego General Plan Noise Element

The Noise Element of the County of San Diego General Plan establishes limitations on sound levels to be received by NSLUs (County of San Diego 2011a). The Noise Element states that an acoustical study is required if it appears that an NSLU would be subject to noise levels of CNEL equal to 60 dBA or greater. If that study confirms that greater than 60 dB CNEL would be experienced, modifications that reduce the exterior noise level to less than 60 dB CNEL and the interior noise levels to below 45 dB CNEL must be made to the development. The General Plan also establishes noise compatibility guidelines for various land uses in the county to determine the compatibility of land use when evaluating proposed development projects.

County of San Diego Noise Ordinance

The County Noise Ordinance, Section 36.401 through 36.423 of the San Diego County Regulatory Ordinances, establishes prohibitions for disturbing, excessive, or offensive noise, and provisions such as sound level limits for the purposes of securing and promoting the public health, comfort, safety, peace, and quiet, for its citizens (County of San Diego 2009c). Planned compliance with sound level limits and other specific parts of the ordinance allows presumption that the noise is not disturbing, excessive, or offensive. The Noise Ordinance allows the County to grant variances from the noise limitations for temporary on-site noise sources, subject to terms and conditions intended to achieve compliance. Finally, the Noise Ordinance establishes additional noise limitations for operation of construction equipment. Specific applicable sections of the noise ordinance are provided below.

Section 36.404 General Sound Level Limits

Except as provided in Section 36.409 of the Noise Ordinance, it shall be unlawful for any person to cause or allow the creation of any noise that exceeds the one-hour average sound level limits in Table 3.9-2, when the one-hour average sound level is measured at the property line of the property on which the noise is produced or at any location on a property that is receiving the noise.

If the measured ambient noise level exceeds the applicable limit in Table 3.9-2, the allowable one-hour average sound level shall be the one-hour average ambient noise level, plus three decibels. The ambient noise level shall be measured when the alleged noise violation source is not operating. A fixed-location public utility distribution or transmission facility located on or adjacent to a property line shall be subject to the sound level limits of this section measured at or beyond six feet from the boundary of the easement upon which the facility is located.

Table 3.9-2 Sound Level Limits in Decibels (dBA)

Zone	Time	One-Hour Average Sound Level Limits (dBA)
(1) RS, RD, RR, RMH, A70, A72, S80, S81, S87, S90, S92 and RV and RU with a density of less than 11 dwelling units per acre.	7:00 a.m. to 10:00 p.m. 10:00 p.m. to 7:00 a.m.	50 45
(2) RRO, RC, RM, S86, V5 and RV and RU with a density of 11 or more dwelling units per acre.	7:00 a.m. to 10:00 p.m. 10:00 p.m. to 7:00 a.m.	55 50
(3) S94, V4 and all commercial zones.	7:00 a.m. to 10:00 p.m. 10:00 p.m. to 7:00 a.m.	60 55
(4) V1, V2	7:00 a.m. to 7:00 p.m.	60
V1, V2	7:00 p.m. to 10:00 p.m.	55
V1	10:00 p.m. to 7:00 a.m.	55
V2	10:00 p.m. to 7:00 a.m.	50
V3	7:00 a.m. to 10:00 p.m. 10:00 p.m. to 7:00 a.m.	70 65
(5) M50, M52 and M54	Anytime	70
(6) S82, M56 and M58.	Anytime	75
(7) S88 (see subsection (c) below)	S88 zones are Specific Planning Areas which allow different uses. The sound level limits above that apply in an S88 zone depend on the use being made of the property. The limits in subsection (1) apply to property with a residential, agricultural or civic use. The limits in subsection (3) apply to property with a commercial use. The limits in subsection (5) apply to property with an industrial use that would only be allowed in an M50, M52 or M54 zone. The limits in subsection (6) apply to all property with an extractive use or a use that would only be allowed in an M56 or M58 zone.	

Source: County of San Diego 2009b

Section 36.408 Hours of Operation of Construction Equipment

Except for emergency work, it shall be unlawful for any person to operate or cause to be operated, construction equipment:

- (a) Between 7:00 p.m. and 7:00 a.m.
- (b) On a Sunday or a holiday. For purposes of this section, a holiday means January 1st, the last Monday in May, July 4th, the first Monday in September, December 25th and any day appointed by the President as a special national holiday or the Governor of the State as a special State holiday. A person may, however, operate construction equipment on a Sunday or holiday between the hours of 10:00 a.m. and 5:00 p.m. at the person's residence or for the purpose of constructing a residence for himself or herself, provided that the operation of construction equipment is not carried out for financial consideration or other consideration of any kind and does not violate the limitations in Sections 36.409 and 36.410.

Section 36.409 Sound Level Limitations on Construction Equipment

Except for emergency work, it shall be unlawful for any person to operate construction equipment or cause construction equipment to be operated, that exceeds an average sound level of 75 decibels for an eight-hour period, between 7:00 a.m. and 7:00 p.m., when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is being received.

Section 36.417 Exemptions

The Noise Ordinance does not apply to the reasonable testing of an emergency generator by any person provided that the testing is conducted between the hours of 7:00 a.m. and 7:00 p.m.

Section 36.423 Variances

A person who proposes to perform non-emergency work on a public right of way, public utility facility, public transportation facility or some other project for the benefit of the general public, who is unable to conform to the requirements of this chapter may apply to the County for a variance authorizing the person to temporarily deviate from the requirements of this chapter.

3.9.3 Thresholds of Significance

3.9.3.1 CEQA Significance Criteria

Thresholds used to evaluate potential significant noise effects are based on applicable criteria in Appendix G of the CEQA Guidelines. A significant noise impact occurs if the proposed action would:

- 1) Expose persons to or generate noise levels in excess of standards established in the San Diego County General Plan or noise ordinance, or result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- 2) Expose persons to or generate excessive groundborne vibration or groundborne noise levels.
- 3) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. Construction activity would be considered significant if it violates the limits established in the San Diego County Noise Ordinance.
- 4) For a project located within an airport land use plan or, where such plan has not been adopted, within two miles of a public use airport or private airstrip, expose people residing or working in the project area to excessive noise.

3.9.3.2 NEPA Considerations

The Department, via its NEPA review of the proposed action, considers the proposed project's compliance with the Noise Control Act and other federal regulations. The Noise Control Act of 1972 establishes a national policy to promote an environment for all Americans free from noise that jeopardizes their health and welfare. Section 42 U.S.C. 4903, Federal Programs, states that federal agency activities that may result in emission of noise would comply with applicable federal, state, interstate, and local requirements related to control and abatement of environmental noise. Additionally, the Noise Control Act states that it is the primary responsibility of state and local governments to control noise. Therefore, the local thresholds established by the County of San Diego, listed above in Section 3.9.3.1, are the applicable NEPA significance criteria for analysis of the proposed project.

3.9.4 Applicable Regulatory Measures

As described in Section 3.1.4, implementation of the WRMP, as identified in the WRMP PEIR, includes PDFs and SCPs to reduce potential environmental effects on noise from OWD projects. The following SCP is relevant to the proposed project:

Noi-SCP-1 Construction activities shall comply with applicable local noise ordinances and regulations specifying sound control, including the County of San Diego. Measures to reduce construction/demolition noise to the maximum extent feasible shall be included in contractor specifications and shall include, but not be limited to, the following:

- Construction activity shall be restricted to the hours specified within each respective Municipal Code, depending on the location of the specific CIP project, as follows:
 - Construction activity for CIP projects located within San Diego County shall occur between hours of 7:00 a.m. to 7:00 p.m., Monday through Saturday; construction shall be prohibited on Sundays and holidays.
- Construction noise for projects located within San Diego County shall not exceed an average sound level of 75 dBA for an eight-hour period at the project's property boundary.
- All construction equipment shall be properly outfitted and maintained with manufacturer-recommended noise-reduction devices.

Consistency with this regulation is addressed in the following analysis. The remaining PDFs and SCPs identified in the Program EIR are not relevant to the proposed project.

3.9.5 Environmental Effects

3.9.5.1 Alternatives 1, 2, and 3

Issue 1: Noise Levels in Excess of Standards or Substantial Permanent Ambient Noise Increase

Would Alternatives 1, 2, or 3, or associated facilities result in exposure of persons to or generation of noise levels in excess of standards established in the San Diego County General Plan or noise ordinance, or result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Proposed Pipeline

The proposed pipeline would be constructed underground, and operations would be limited to the passive conveyance of water and potentially infrequent and irregular maintenance activities along the alignment. Once installed, the pipeline itself would not generate any noise. Therefore, operation of the pipeline would not result in permanent increases in the ambient noise environment.

Proposed Above-ground Facilities

The potential pump station, if required, would consist of five pumps with an ultimate capacity of 50 MGD. Each pump would be powered by a 600-horsepower electric motor. The equipment specifications for the pump station are currently unknown; however, noise for pumps for similar facilities range from 75 to 101 dBA at approximately 3 feet from the equipment source (Atkins 2008, Helix 2013). This analysis assumes the highest noise level (101 dBA) for each pump to conservatively account for other miscellaneous pieces of equipment on site that may generate noise such as valves. The analysis also assumes operation of all five pumps simultaneously, for a combined maximum hourly noise level of 108 dBA L_{eq} or 115 dBA CNEL, at 3 feet from the pump station. The pump station would be enclosed in a masonry structure. Typical equipment enclosures provide at least 20 dBA noise level reduction (Wieland

Acoustics, Inc. 2008). Therefore, the pump station would potentially generate noise levels of 88 dBA L_{eq} or 95 dBA CNEL at 3 feet from the station, or 64 dBA L_{eq} /71 dBA CNEL at 50 feet.

The equipment specifications for the disinfection facility are also currently unknown; however, the disinfection facility would not include large pumps or other mechanical equipment that would be anticipated to generate substantial noise. Noise analyses for similar facilities determined that operation of equipment would have negligible impact on surrounding ambient noise (NYC DEP 2004, Mestre Graves Associates 2012). These analyses suggest noise levels would be approximately 55 dBA L_{eq} , or 62 dBA CNEL at 50 feet, taking into account that the equipment would be enclosed (NYCDEP 2004). If the pump station and disinfection facilities would be collocated, the two facilities would have the potential to generate a maximum hourly noise level of 65 dBA L_{eq} , or 72 dBA CNEL, at 50 feet from equipment.

The closest noise-sensitive receptor to any of the proposed disinfection facility locations is the San Diego Correctional Facility and East Mesa Detention Facility, located approximately 950 feet southeast of the proposed disinfection facility location south of Roll Reservoir. The correctional and detention facilities are considered noise-sensitive receptors because they provide housing for inmates. This distance would reduce noise levels from operation of the disinfection facility at Roll Reservoir to below 30 dBA L_{eq} or 36 dBA CNEL. As discussed above in Section 3.9.1.3, existing measured ambient noise levels in the area range from 50 dBA to 55 dBA L_{eq} . Due to distance, operation of the disinfection facility would not exceed the County's day or nighttime hourly noise level limit of 55 dBA and 50 dBA L_{eq} , respectively, at the nearest sensitive receptor, as shown in Table 3.9-2, and would likely not be audible over existing ambient noise levels. The County sound level limits for higher density housing (see Zone Category 2 in Table 3.9-2) are assumed for the correctional and detention facilities because bed towers are not located in a residential area and are high density housing. Therefore, operational noise associated with the disinfection facility would not generate excessive noise levels or result in significant increase in ambient noise levels.

The closest noise-sensitive receptors to the potential pump station location at the United States-Mexico border are the commercial and industrial uses located in the vicinity of Enrico Fermi Drive, approximately 1.5 miles from the proposed pump station. At this distance, noise from the pump station would be reduced to less than 20 dBA L_{eq} and 30 dBA CNEL. Operational noise would not be audible at the nearest receptor and would not exceed any day or nighttime hourly noise level limit.

The proposed meter station would not include pumps or other equipment with the potential to generate noise levels that would affect ambient noise levels outside of the state. Some noise would be generated by the proposed valves as pressure is released, but noise levels would be intermittent and would be substantially less than noise generated by the proposed pumps at the disinfection facility and potential pump station. Additionally, the closest receptors to the proposed meter station location at the United States-Mexico border are the commercial and industrial uses located in the vicinity of Enrico Fermi Drive, more than 1.5 miles from the proposed meter station. At this distance, noise from the meter station would not be audible and would not exceed the County's day or nighttime hourly noise level limit.

The closest noise-sensitive receptors to a potentially collocated disinfection facility, pump station, and meter station at the United States-Mexico border would be the commercial and industrial uses located in the vicinity of Enrico Fermi Drive. Noise from the collocated facility would attenuate to less than 30 dBA CNEL at 1.5 miles. Therefore, due to the large distance between the collocated facilities and the commercial and industrial uses, operation at a collocated facility would not be audible at the nearest receptor and would not exceed any day or nighttime hourly noise level limit.

Emergency generators would be located at the disinfection facility and pump station and tested monthly during the day for approximately 30 minutes. Brief generator testing would not result in a permanent increase in noise levels. Additionally, the generators would be located within the same enclosure as the disinfection facility and potential pump station and would generate similar noise as the proposed pumps. Therefore, similar noise levels would be expected to occur. As such, testing of the generators would not exceed the County's most conservative daytime noise level limit of 50 dBA at the nearest sensitive receptor, which is the San Diego Correctional Facility and East Mesa Detention Facility located 950 feet southeast of the disinfection facility proposed south of Roll Reservoir. Similarly, landscape maintenance activities for the above-ground facilities would occur approximately once every two months. Operation of landscape equipment would be limited to a few hours and would not result in a permanent increase in ambient noise levels. Due to distance between the proposed project facilities and the nearest receptors, it is unlikely that equipment would be audible at the receptors. Landscape equipment would not exceed noise level limits at the nearest receptor.

Transportation Noise Sources

A substantial permanent increase in traffic noise would occur if the project would cause ambient noise levels to exceed 60 dBA CNEL, or an increase by 10 dBA CNEL over preexisting noise levels. Transportation noise sources would be associated with vehicular trips by employees and deliveries and associated with infrequent and irregular maintenance activities along the pipeline alignment. However, operation of the disinfection facility, meter station, and pump station, would not generate a significant volume of new vehicle trips. The disinfection facility would require approximately one maintenance truck trip per day, one chemical delivery per week in the winter, and two chemical deliveries per week in the summer. The potential pump station and meter station would also each require one maintenance truck trip per day. Therefore, Alternatives 1, 2, and 3 would generate up to four new trips per day. Due to the minimal number of vehicular trips associated with the operation of Alternatives 1, 2, and 3, transportation noise increases would be negligible.

Summary

Implementation of Alternatives 1, 2, and 3 would not result in excessive noise levels or a significant permanent increase in ambient noise levels associated with operation of proposed facilities. Therefore, noise associated with Alternatives 1, 2, and 3 would be less than significant.

Issue 2: Excessive Groundborne Vibration or Groundborne Noise

Would Alternatives 1, 2, or 3, or associated facilities result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

The main concerns associated with groundborne vibration are annoyance and structural damage; however, vibration-sensitive instruments and operations can be disrupted at much lower levels than would typically affect other uses. There are no existing sources of substantial groundborne vibration in the vicinity of the project site and, as a result, the proposed project would not be exposed to excessive levels of groundborne vibration. In addition, the proposed pipeline, disinfection facility, potential pump station, meter station, and outfall structure would not generate noticeable groundborne vibration during operation. Therefore, the following analysis focuses on construction phase vibration effects to adjacent sensitive receptors and land uses.

Table 3.9-3 below shows the adopted County of San Diego groundborne vibration and groundborne noise impact criteria. These criteria are used to determine whether frequent or infrequent vibration effects would be significant on three selected land use categories (Categories 1 through 3). Because

construction would take place for several hours each day, it would be subject to the frequent event criteria. The land uses closest to the project site include correctional facilities where people normally sleep (Land Use Category 2). The Otay Mesa Energy Center is also in the project vicinity and is primarily used during the day (Land Use Category 3).

Table 3.9-3 San Diego County Groundborne Vibration Impact Criteria

Land Use Category	Groundborne Vibration Impact Levels (inches/second)		Groundborne Noise Impact Levels (dBA)	
	Frequent Events ⁽¹⁾	Occasional or Infrequent Events ⁽²⁾	Frequent Events ⁽¹⁾	Occasional or Infrequent Events ⁽²⁾
Category 1: Buildings where low ambient vibration is essential for interior operations (research and manufacturing facilities with special vibration constraints)	0.0018 ⁽³⁾	0.0018 ⁽³⁾	Not applicable ⁽⁴⁾	Not applicable ⁽⁴⁾
Category 2: Residences and buildings where people normally sleep (hotels, hospitals, residences, and other sleeping facilities)	0.0040	0.010	35 dBA	43 dBA
Category 3: Institutional land uses with primarily daytime uses (schools, churches, libraries, other institutions, and quiet offices)	0.0056	0.014	40 dBA	48 dBA

Vibration levels are measured in or near the vibration-sensitive use.

(1) "Frequent Events" is defined as more than 70 vibration events of the same source per day.

(2) "Occasional or Infrequent Events" is defined as fewer than 70 vibration events per day.

(3) This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration sensitive manufacturing or research would require detailed evaluation to define acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the HVAC systems and stiffened floors.

(4) Vibration-sensitive equipment is not sensitive to ground-borne noise.

Source: County of San Diego 2009b

Groundborne vibration is progressively reduced as the distance from the source increases. The nearest Category 2 receptor to any alignment is the San Diego Correctional Facility, located approximately 800 feet east of the construction corridor for Alternatives 1, 2, and 3. The nearest Category 3 receptor to any alignment is the Otay Mesa Energy Center, located approximately 600 feet north of the project construction corridor in Paseo de la Fuente. Typical vibration source levels at these distances for construction equipment required for the project are provided in Table 3.9-4. As shown in this table, groundborne vibration and noise from proposed project construction would not exceed County of San Diego vibration criteria shown in Table 3.9-3, and a significant impact would not occur. Impacts related to a significant increase in groundborne vibration levels would be less than significant.

Table 3.9-4 Vibration Source Levels for Construction Equipment

Construction Equipment	Approximate PPV (inches/second) /dBA at 25 feet	Approximate PPV (inches/second) /dBA at 600 feet	Approximate PPV (inches/second) /dBA at 800 feet
Large Bulldozer	0.089/62 dBA	0.0008/21 dBA	0.0005/17 dBA
Loaded Trucks	0.076/61 dBA	0.0006/20 dBA	0.0004/16 dBA
Jackhammer	0.035/54 dBA	0.0003/13 dBA	0.0002/9 dBA
Small Bulldozer	0.003/33 dBA	0.00003/0 dBA	0.00002/0 dBA
Hoe Ram	0.089/62 dBA	0.0008/21 dBA	0.0005/17 dBA
Drilling Equipment	0.089/62 dBA	0.0008/21 dBA	0.0005/17 dBA
Applicable Threshold	--	0.0056/40 dBA	0.0040/35 dBA
Significant Impact?	--	No	No

Source: FTA 2006 (Reference Vibration Levels), County of San Diego 2009b (Thresholds)

Issue 3: Substantial Temporary or Periodic Increase in Ambient Noise

Would Alternatives 1, 2, or 3, or associated facilities result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Construction of the proposed project would generate noise that could disrupt communication and routine activities. The magnitude of the impact would depend on the type of construction activity, equipment, duration of the construction phase, distance between the noise source and receiver, and intervening structures. Sound levels from typical construction equipment range from 74 dBA to 85 dBA at 50 feet from the source, as shown in Table 3.9-5 (FHWA 2008). Noise from construction equipment generally exhibits point source acoustical characteristics. A point source sound attenuates at a rate of 6 dBA per doubling of distance from the source, which applies to the propagation of sound waves with no ground interaction.

Construction of the proposed project would have the potential to generate temporary increases in the ambient noise level as a result of operation of construction equipment and temporary increases in vehicle trips. These noise sources are addressed below.

Table 3.9-5 Typical Noise Levels for Construction Equipment	
Construction Equipment	Typical Noise Level at 50 feet (dBA)
Air Compressor	77.7
Backhoe	77.6
Concrete Mixer Truck	78.8
Crane	80.6
Dozer	81.7
Dump Truck	76.5
Excavator	80.7
Generator	80.6
Grader	85.0
Loader	79.1
Paver	77.2
Roller	80.0
Scraper	83.6
Tractor	84.0
Welder	74.0
Source: FHWA 2008	

Construction Equipment

Standard equipment, including excavators, backhoes, trucks, and air compressors, would be used for construction of the proposed project. Noise levels from construction activities on the project site were determined based on the construction equipment list provided by the applicant and typical equipment noise levels determined by the Roadway Construction Noise Model (RCNM) (FHWA 2008). The three noisiest pieces of typical construction equipment (backhoe, air compressor, and excavator) that could be required for the project are assumed to operate simultaneously in the same location. Due to the limited

amount of construction equipment that would be active at a given time, it is assumed that no more than three pieces of construction equipment would be required simultaneously. Typical construction of the project would have the potential to generate hourly average noise levels up to 80 dBA L_{eq} at 50 feet from the construction site.

The nearest existing receptors to any construction area are the offices at the Otay Mesa Energy Center, located approximately 650 feet north of the proposed alignments in Paseo de la Fuente. At this distance, noise from typical construction equipment would attenuate to approximately 58 dBA L_{eq} .

Therefore, noise levels would not exceed the County daytime noise levels limit for construction of 75 dBA L_{eq} over an 8-hour period at any receptor. Section 36.409 of the County noise ordinance prohibits construction between 7:00 p.m. and 7:00 a.m. Construction would comply with these restrictions, as listed in Noi-SCP-1, and no nighttime construction is anticipated for the proposed project. If any unanticipated nighttime construction is ultimately required, a variance may be required from the County and the construction contractor would be required to implement any measures outlined by the County to minimize noise. Therefore, a temporary significant impact from construction equipment would not occur.

Construction Vehicle Trips

Construction activities would also have the potential to result in a temporary increase in traffic noise along routes serving the project site. Traffic volumes for each roadway that would serve as a construction route are provided in the TIS prepared for the project (VRPA 2015). Noise levels for area roadways were calculated using standard noise modeling equations adapted from the FHWA noise prediction model. The modeling calculations take into account the posted vehicle speed, average daily traffic volume, and the estimated vehicle mix. The estimates are conservative because the model does not take into account buildings or topography that would provide noise attenuation. Noise levels at distances farther from the source than the specific receptor would be lower due to attenuation provided by increased distance from the noise source. Generally, noise from heavily traveled roadways would experience a decrease of approximately 3 dBA for every doubling of distance from the roadway.

The construction traffic scenario includes construction of the proposed project as well as the cumulative growth and development in the project area anticipated by the Year 2020, which is the anticipated construction year for the project. Traffic volumes and noise levels in 2020 with and without the project construction trips, are provided in Table 3.9-6. A significant adverse noise impact would occur if the project would cause a roadway to exceed 60 dBA CNEL or there would be an increase of 10 dBA CNEL over pre-existing noise levels. As shown in Table 3.9-6, implementation of the proposed project would not cause any roadway noise level to exceed 60 dBA CNEL or exceed the incremental noise impact standard on any roadway. The project would not cause a temporary noise increase of more than 1 dBA CNEL on any roadway. Therefore, the proposed project would not result in a potentially significant traffic noise impact during construction.

Table 3.9-6 Future (Year 2020) Traffic Noise Levels

Roadway	Segment	Year 2020 Noise Level (dBA CNEL) ⁽¹⁾	Year 2020 + Project Noise Level (dBA CNEL) ⁽¹⁾	Increase in Noise Level	Allowable Increase	Significant Impact?
Alta Road	Roll Reservoir to Paseo de la Fuente	67	67	0	10	No
	Paseo de la Fuente to Otay Mesa Road	68	68	0	10	No
Otay Mesa Road	Alta Road to Enrico Fermi Drive	68	68	0	10	No
	Enrico Fermi Drive to Sanyo Ave	68	68	0	10	No
	Sanyo Ave. to Harvest Road	69	69	0	10	No
Paseo de la Fuente	Alta Road to its terminus	61	62	1	10	No

⁽¹⁾ All noise levels at 50 feet from the roadway centerline.

Source: VRPA 2015 (traffic data); FHWA 2004 (noise level estimates). See Traffic Impact Study for noise model assumptions and output.

Issue 4: Excessive Aircraft Noise

For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport or private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

The proposed project would be located within three miles of Brown Field Municipal Airport and Tijuana International Airport. The project area is subject to aircraft overflights from both airports. The project area is outside of the 60 dBA CNEL noise contour for Brown Field, but the southern portions of Alternatives 1, 2, and 3 may be exposed to noise levels in excess of 60 dBA CNEL from the Tijuana International Airport. The proposed project would construct a water conveyance pipeline and supporting facilities and would not involve the construction or operation of facilities for human occupancy that would be subject to regular exposure to aircraft noise. Therefore, effects would be less than significant.

3.9.5.2 No Action Alternative

Under the No Action Alternative, no construction, including pipelines or related infrastructure, would occur and the project area would remain in its current condition. Therefore, the No Action – No Project would not result in any effects related to a substantial permanent ambient noise increase, excessive groundborne vibration or groundborne noise, temporary or periodic increase in ambient noise, or excessive aircraft noise because no construction would occur.

3.9.6 Mitigation Measures

Implementation of the proposed project would not result in a significant increase in excessive noise levels or permanent increase in noise levels in the project area; significant increase in groundborne vibration levels; substantial temporary or periodic increase in ambient noise; or excessive aircraft noise. No mitigation measures are required.

3.10 Transportation/Traffic

This section analyzes the affected environment of Alternatives 1, 2, and 3, and associated facilities pertaining to transportation/traffic. The information presented in this section is based on the Traffic Impact Study (TIS) (VRPA Technologies, Inc. 2015).

3.10.1 Environmental Setting/Affected Environment

3.10.1.1 Existing Roadway Segments Serving the Project Site

The proposed project study area is located in unincorporated San Diego County, in the community of Otay Mesa, adjacent to the United States-Mexico border (see Figure 3.10-1). The TIS analyzed six roadway segments to assess the proposed project's potential effects to local and regional traffic systems, as discussed below. As shown in Figure 3.10-2 and Figure 3.10-3, analysis of the roadway segments was based on average daily traffic (ADT) conditions for roadway segments in the vicinity of the project site. The six roadway segments include the following:

- Otay Mesa Road from the I-125 Tollway to Sanyo Avenue (four lane major roadway)
- Otay Mesa Road from Sanyo Avenue to Enrico Fermi Drive (two lane collector roadway)
- Otay Mesa Road from Enrico Fermi Drive to Alta Road (two lane collector)
- Alta Road from Otay Mesa Road to Paseo de la Fuente (four lane major roadway)
- Alta Road from Paseo de la Fuente to the District's Roll Reservoir (two lane collector roadway)
- Paseo de la Fuente from Alta Road to the southern terminus cul-de-sac (four lane major roadway)

All roadway segments are located within the County of San Diego. Existing ADT counts were based on counts published by SANDAG. The SANDAG counts were based on 2012 conditions and were converted to 2014 conditions using a growth factor of 2 percent per year. This growth factor was based on historical counts in the area published by SANDAG.

3.10.1.2 Existing Traffic Volumes and Levels of Service

Level of service (LOS) is the term used to denote the different operating conditions that occur on a given roadway segment or intersection under various traffic volume loads. It is a qualitative measure used to describe a quantitative analysis taking into account factors such as roadway geometrics, signal phasing, speed, travel delay, freedom to maneuver, and safety. LOS provides an index to the operational qualities of a roadway segment or an intersection. LOS designations range from A (light traffic, minimal delays) to F (heavy traffic and substantial delays). LOS D is the typical design standard used for San Diego County roadways. Therefore, an LOS of A through D would indicate satisfactory operations, while an LOS of E or F would indicate the potential for traffic congestion and a need for further analysis.

Table 3.10-1 provides a capacity analysis for the existing condition. As shown in this table, all roadways operate at LOS C or better, indicating satisfactory conditions in the current condition.

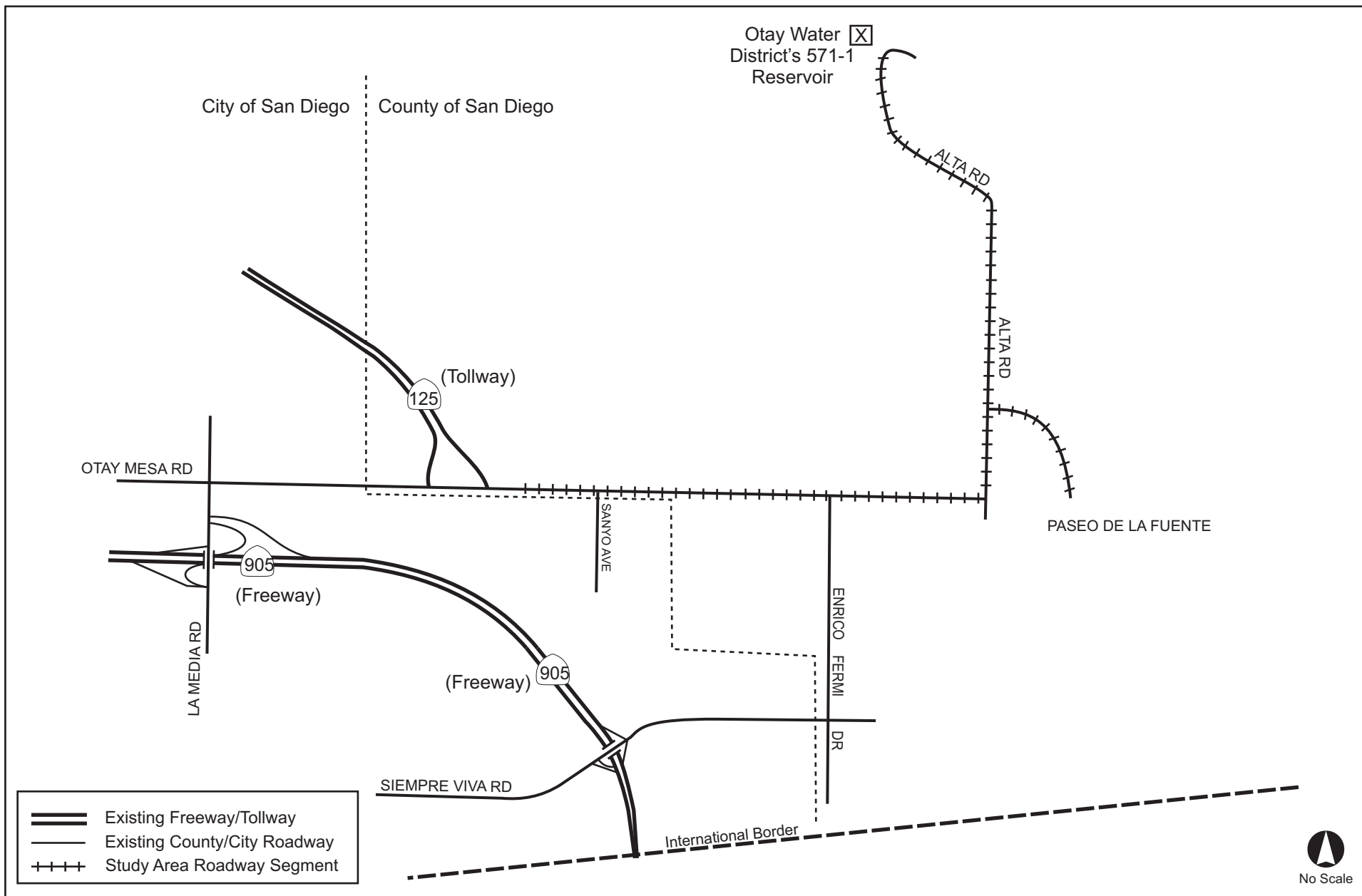


FIGURE 3.10-1
Project Study Area

100032058

Source: VRPA 2015

Otay Mesa Conveyance and Disinfection System Project

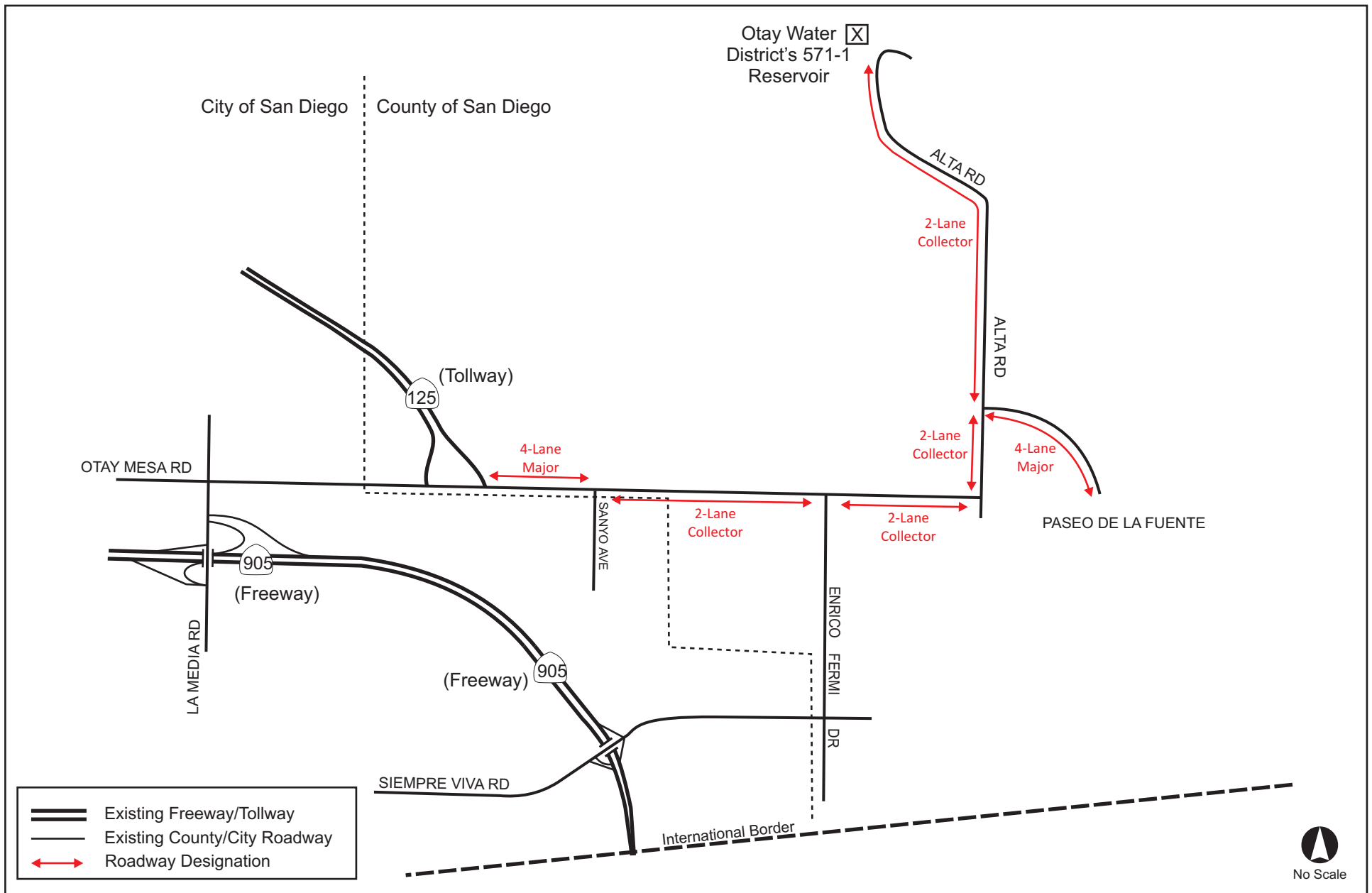


FIGURE 3.10-2
Existing Roadway Classifications

100032058

Source: VRPA 2015

Otay Mesa Conveyance and Disinfection System Project

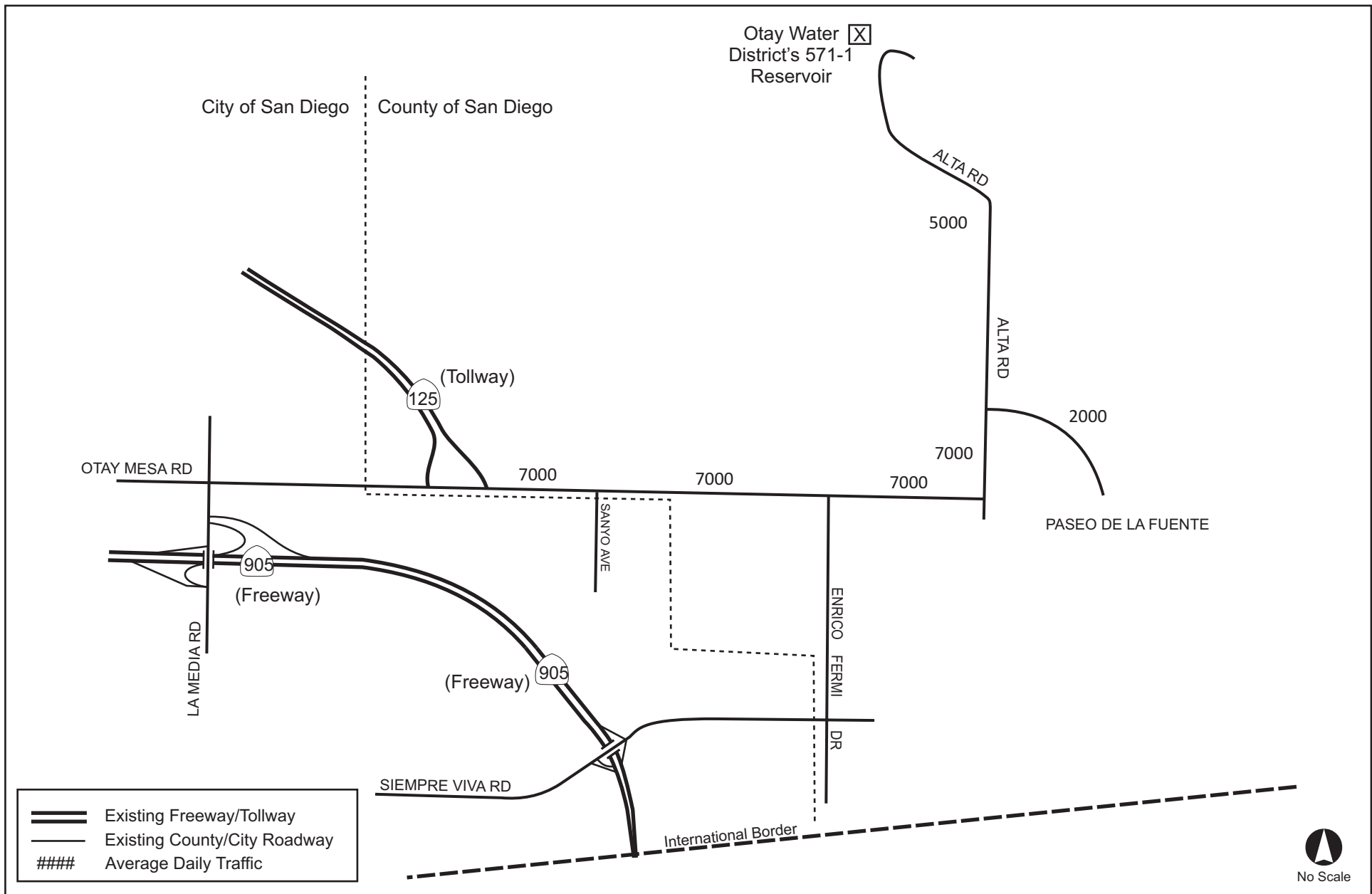


FIGURE 3.10-3
Average Daily Traffic Volumes

Source: VRPA 2015

100032058

Otay Mesa Conveyance and Disinfection System Project

Table 3.10-1 Existing Street Segment Operations

Street Segment	Classification	Capacity at LOS E	Existing (2014)		
			Volume	LOS	V/C
Otay Mesa Road					
I-215 to Sanyo Avenue	Major road with intermittent turn lane	34,200	7,000	A	0.20
Sanyo Avenue to Enrico Fermi Drive	Community collector with intermittent turn lane	19,000	7,000	C	0.37
Enrico Fermi Drive to Alta Road	Community collector with intermittent turn lane	19,000	7,000	C	0.37
Alta Road					
Otay Mesa Road to Paseo de la Fuente	Community collector with intermittent turn lane	19,000	7,000	C	0.37
Paseo de la Fuente to Roll Reservoir	Community collector with intermittent turn lane	19,000	5,000	B	0.26
Paseo de la Fuente					
Alta Road to southern terminus cul-de-sac	Major road with raised median	37,000	2,000	A	0.05

LOS = Level of Service; V/C = Volume to Capacity ratio
Source: VRPA 2015

3.10.2 Regulatory Setting

3.10.2.1 Federal Regulations and Standards

Highway Capacity Manual

The Highway Capacity Manual (HCM), prepared by the federal Transportation Research Board, is the result of a collaborative multi-agency effort between the Transportation Research Board, FHWA, and American Association of State Highway and Transportation Officials (Transportation Research Board 2010). The HCM contains concepts, guidelines, and procedures for computing the capacity and quality of service of various transportation facilities, including freeways, signalized and unsignalized intersections, and rural highways, and the effects of transit, pedestrians, and bicycles on the performance of these systems.

Code of Federal Regulations Title 23

Revised in April 1, 2005, CFR Section 450.220 of Title 23 requires each state to carry out a continuing, comprehensive, and intermodal statewide transportation planning process. This planning process must include the development of a statewide transportation plan and transportation improvement program that facilitates the efficient, economical movement of people and goods in all areas of the state.

Moving Ahead for Progress in the 21st Century Act

On July 6, 2012, the Moving Ahead for Progress in the 21st Century Act (MAP-21) was signed into law. MAP-21 revised the policy and programmatic framework for investments meant to guide the nation's surface transportation system's growth and development. MAP-21 establishes a streamlined and performance-based surface transportation program, which builds upon many of the highway, transit, bike, and pedestrian programs and policies established by the Intermodal Surface Transportation Efficiency Act of 1991.

3.10.2.2 State Regulations and Standards

California Department of Transportation Standards

Caltrans is responsible for planning, designing, building, operating, and maintaining California's state road system. Caltrans sets standards, policies, and strategic plans that aim to do the following: (1) provide the safest transportation system in the nation for users and workers, (2) maximize transportation system performance and accessibility, (3) efficiently deliver quality transportation projects and services, (4) preserve and enhance California's resources and assets, and (5) promote quality service. Caltrans has the discretionary authority to issue special permits for the use of state highways for other than normal transportation purposes.

Statewide Transportation Improvement Program

The California 2014 Statewide Transportation Improvement Plan (STIP), approved by the USDOT in August 2013, is a multi-year, intermodal program of transportation projects that is consistent with the statewide transportation planning processes, metropolitan plans, and Title 23 of the CFR. The STIP is prepared by Caltrans in cooperation with the Metropolitan Planning Organizations (MPOs) and the Regional Transportation Planning Agencies. In San Diego County, the MPO and Regional Transportation Planning Agency is SANDAG. The STIP contains all capital and non-capital transportation projects or identified phases of transportation projects for funding under the federal Transit Act and CFR Title 23, including federally funded projects.

3.10.2.3 Regional Regulations and Standards

2050 Regional Transportation Plan

SANDAG adopted the 2050 Regional Transportation Plan (RTP) and Sustainable Communities Strategy (SCS) on October 28, 2011 (SANDAG 2011a, 2011b). The 2050 RTP maps out a system designed to maximize transit enhancements, integrate biking and walking elements, and promote programs to reduce demand and increase efficiency (SANDAG 2011a). The RTP also identifies the plan for investing in local, state, and federal transportation facilities in the region over the next 40 years. The SCS also addresses how the transportation system would be developed in such a way that the region is able to reduce per-capita GHG emissions to state-mandated levels.

2014 Regional Transportation Improvement Program

The Regional Transportation Improvement Plan (RTIP) is a multi-year program of proposed major highway, arterial, transit, and bikeway projects. The 2014 RTIP is a prioritized program designed to implement the region's overall strategy for providing mobility and improving the efficiency and safety of efforts to attain federal and state air quality standards for the region (SANDAG 2014).

San Diego County Congestion Management Program

State Proposition 111, passed by voters in 1990, established a requirement that urbanized areas prepare and regularly update a Congestion Management Program (CMP), which is part of SANDAG's RTP. The purpose of the CMP is to monitor the performance of the region's transportation system; develop programs to address near-term and long-term congestion; and better integrate transportation and land use planning (SANDAG 2008).

San Diego County General Plan Mobility Element

The San Diego County General Plan (GP) Mobility Element provides a framework for a balanced, multi-modal transportation system within the unincorporated areas of the County of San Diego (San Diego County 2011a). The Mobility Element includes a description of the County's transportation network and the goals and policies that address safety, efficiency, maintenance, and management of the transportation network.

San Diego County Public Road Standards

The County of San Diego's Public Road Standards (PRS) were updated consistent with the County's Mobility Element in March 2012. The PRS serve as guidelines for design and construction of public road improvements projects within unincorporated San Diego County. The PRS apply to both County and developer initiated public road improvement projects.

San Diego County Guidelines for Determining Significance and Report Format and Content Requirements for Transportation and Traffic

The County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements for Transportation and Traffic, modified August 24, 2011, provide guidance for evaluating adverse environmental effects that a project may have in relation to traffic and transportation (County of San Diego 2011c). The guidelines for determining significance are organized into six categories: road segments, signalized intersections, unsignalized intersections, ramps, hazards due to an existing transportation design feature, and hazards to pedestrians or bicyclists. The categories relevant to the proposed project are listed below.

Roadway Segments

Pursuant to the County General Plan Mobility Element, new development must provide improvements or other measures to mitigate traffic effects to avoid:

- a) Reduction in LOS below "C" for on-site Mobility Element roads;
- b) Reduction in LOS below "D" for off-site and on-site abutting Mobility Element roads; and
- c) "Significantly impacting congestion" on roads that operate at LOS "E" or "F." If effects cannot be mitigated, the project cannot be approved unless a statement of overriding findings is made pursuant to the State CEQA Guidelines.

The County has created the following guidelines to evaluate likely motor vehicle traffic effects of a proposed project for road segments and intersections serving that project site, for purposes of determining whether the development would "significantly impact congestion" on the referenced LOS E and F roads. The guidelines are summarized in Table 3.10-2. The levels in Table 3.10-2 are based upon average operating conditions on County roadways. It should be noted that these levels only establish general guidelines, and that the specific project location must be taken into account in conducting an analysis of traffic impact from new development.

Table 3.10-2 Measures of Significant Project Effects to Congestion on Circulation Element Road Segments: Allowable Increases on Congested Road Segments

Level of Service	Two-lane Road	Four-lane Road	Six-lane Road
LOS E	200 ADT	400 ADT	600 ADT
LOS F	100 ADT	200 ADT	300 ADT

Notes:

1. By adding proposed project trips to all other trips from a list of projects, this same table must be used to determine if total cumulative effects are significant. If cumulative effects are found to be significant, each project that contributes additional trips must mitigate a share of the cumulative effects.
2. The County may also determine effects have occurred on roads even when a project's traffic or cumulative effects do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.

Source: County of San Diego 2011c

Congestion Management Plan

Projects that generate over 2,400 ADT or 200 peak hour trips, must comply with the traffic study requirements of SANDAG's CMP. The proposed project would not exceed these thresholds; therefore, no CMP analysis is required.

3.10.3 Thresholds of Significance

3.10.3.1 CEQA Significance Criteria

Thresholds used to evaluate potential transportation effects are based on applicable criteria in Appendix G of the CEQA Guidelines. A significant transportation impact occurs if the proposed project would:

- 1) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.
- 2) Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.
- 3) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- 4) Result in inadequate emergency access.
- 5) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

3.10.3.2 NEPA Significance Considerations

There are no federal significance criteria established for transportation and traffic effects. However, NEPA reviews identify and analyze effects that could result in an adverse effect to the environment. Therefore, for the purpose of this analysis, the CEQA significance criteria listed above were used for NEPA considerations as well.

3.10.4 Applicable Regulatory Measures

As described in Section 3.1, implementation of the District's WRMP, as identified in the WRMP PEIR, includes PDFs and SCPs to reduce potential environmental effects on transportation and traffic conditions that result from District projects. The following SCP is applicable to the proposed project:

Haz-SCP-2 In the event that CIP construction activities would require a lane or roadway closure, or could otherwise substantially interfere with traffic circulation, the contractor will obtain a Traffic Control Permit from the local land use agency and/or state agencies such as Caltrans, prior to construction as necessary, and implement a traffic control plan to ensure that adequate emergency access and egress is maintained and that traffic will move efficiently and safely in and around the construction site. The traffic control plan may include, but not limited to, the following measures:

- Install traffic signs, cones, flags, flares, lights, and temporary traffic signals in compliance with the requirements of local jurisdictions, and relocate them as the work progresses to maintain effective traffic control.
- Provide trained and equipped flag persons to regulate traffic flow when construction activities encroach onto traffic lanes.
- Control parking for construction equipment and worker vehicles to prevent interference with public and private parking spaces, access by emergency vehicles, and owner's operations.
- Traffic control equipment, devices, and post settings will be removed when no longer required. Any damage caused by equipment installation will be repaired.

3.10.5 Environmental Effects

3.10.5.1 Alternatives 1, 2, and 3

Issue 1: Circulation System Performance

Would implementation of Alternatives 1, 2, or 3, or associated facilities conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Project Trip Generation and Distribution

Alternatives 1, 2, and 3 require minimal vehicle trips for operation and maintenance activities; therefore, ongoing operation and maintenance of the project would have less than significant traffic effects. Therefore, analysis of the generation and distribution of project traffic focused on construction traffic.

Most traffic associated with the proposed project would be from construction-related activities including construction worker trips to and from the project area; transport of construction equipment and materials; and haul trucks to and from the project area carrying disposal soils. Project trip generation calculations were based on the project description and related project studies indicating a daily construction trip generation of 34 one-way heavy truck trips per day. Peak hour trip generation

was based on the analysis of a similar, but larger, water pipeline constructed by the San Diego County Water Authority (Mission Trails FRS II, Pipeline Tunnel, and Vent Demolition Project EIR, March 2006). Project trip generation is summarized as follows:

- 1) Daily Trip Generation: 17 round trip heavy truck trips for a total of 34 one-way trips
- 2) AM Peak Hour Trip Generation: 2 directional heavy truck trips for a two-way total of 4 trips
- 3) PM Peak Hour Trip Generation: 1 directional heavy truck trip for a two-way total of 2 trips

For Alternatives 1, 2, and 3, 100 percent of project trips were distributed along the three Otay Mesa Road segments and the Alta Road segment from Otay Mesa Road to Paseo de la Fuente. Project trips associated with construction of Alternatives 1, 2, and 3 and above-ground facilities north of the Alta Road/Paseo la de Fuente intersection were distributed along the Alta Road segment from Paseo de la Fuente to Roll Reservoir. Construction activities associated with Alternatives 1, 2, and 3 and above-ground facilities south of the Alta Road/Paseo la de Fuente intersection were distributed to the Paseo de la Fuente roadway segment from Alta Road to the southern terminus cul-de-sac. The trip distribution assumes that construction operations would occur simultaneously on Alta Road and Paseo de la Fuente. This is a conservative assumption since construction activity would be focused on one roadway or the other at various times during the construction phasing. The resulting project trips are shown in Figure 3.10-4.

Construction Year (2020) Without Project Scenario

Analysis assumes that construction of the proposed project would occur no earlier than 2020. Therefore, the year 2020 was selected as the appropriate time frame for the analysis of traffic effects. Cumulative development projects in the project area were reviewed based on previous traffic analyses in the project area including the SR-11 and the Otay Mesa East POE EIR/EIS (November 2012). This analysis did not identify any cumulative projects that would have a significant traffic impact on the project traffic study area between 2014 and 2020 (VRPA 2015). The traffic counts for the Construction Year without Project Scenario were increased by a factor of 2 percent per year from the Figure 3.10-2 counts to forecast 2020 traffic conditions. This 2 percent growth factor was based on historical counts in the area published by SANDAG to forecast traffic conditions to account for general traffic increases. The resulting traffic conditions are shown in Figure 3.10-5 and in Table 3.10-3 below. As shown in Table 3.10-3, in the Construction Year without Project Scenario all roadway segments would operate at a LOS C or better. None of the roadways would be impaired in the 2020 scenario.

Construction Year (2020) Plus Project Scenario

Figure 3.10-6 and Table 3.10-3 show the traffic conditions for the Construction Year Plus Project Scenario. To determine the traffic conditions in the Construction Year Plus Project Scenario, the project's traffic conditions were combined with the traffic conditions of the Construction Year Without Project Scenario. As shown in Table 3.10-3, the proposed project would not cause any of the study area roadways to operate below a LOS C and, as such, traffic effects associated with the project would be less than significant.

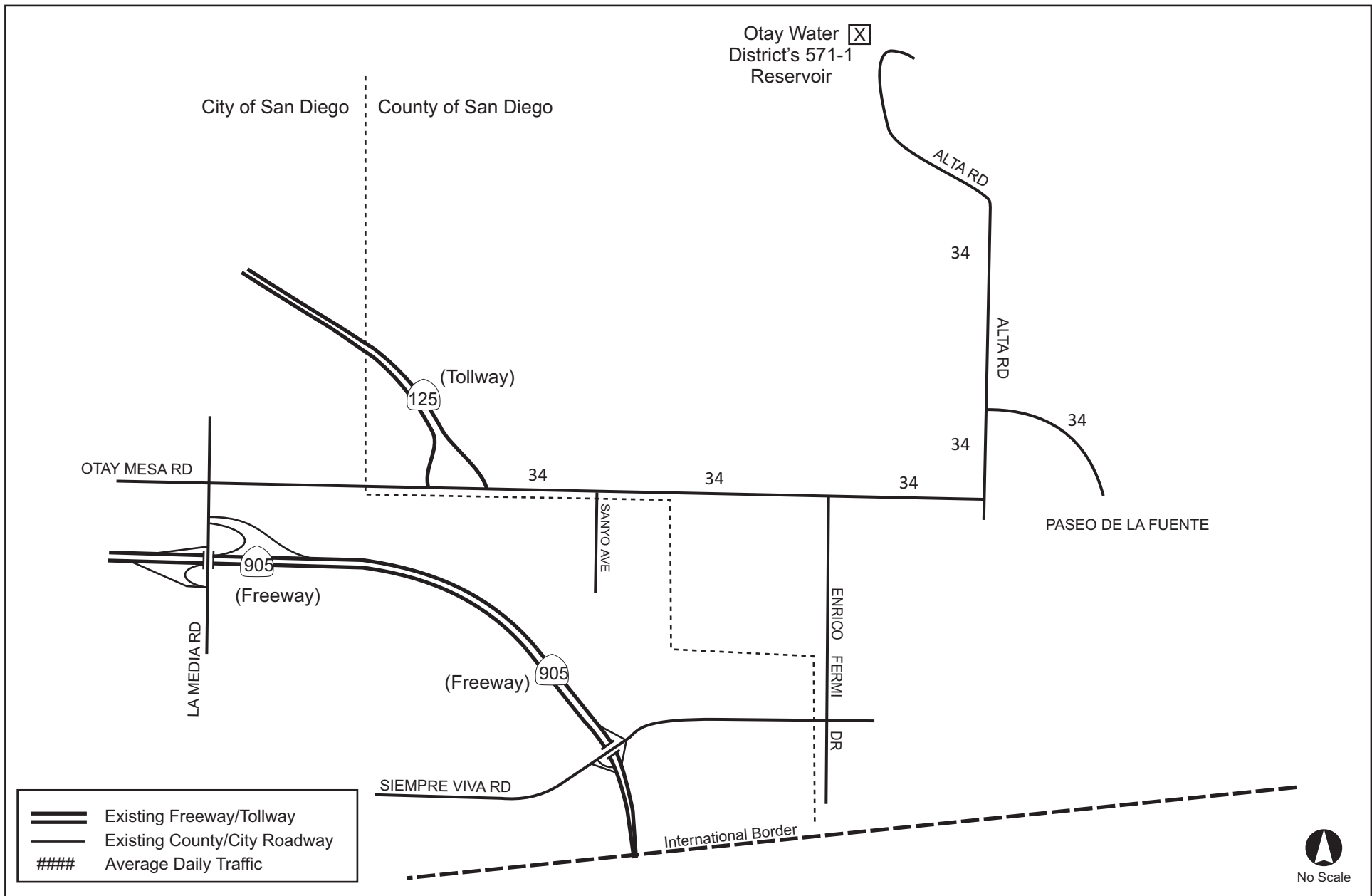


FIGURE 3.10-4
Proposed Project Average Daily Traffic Volumes

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Otay Mesa Conveyance and Disinfection System Project

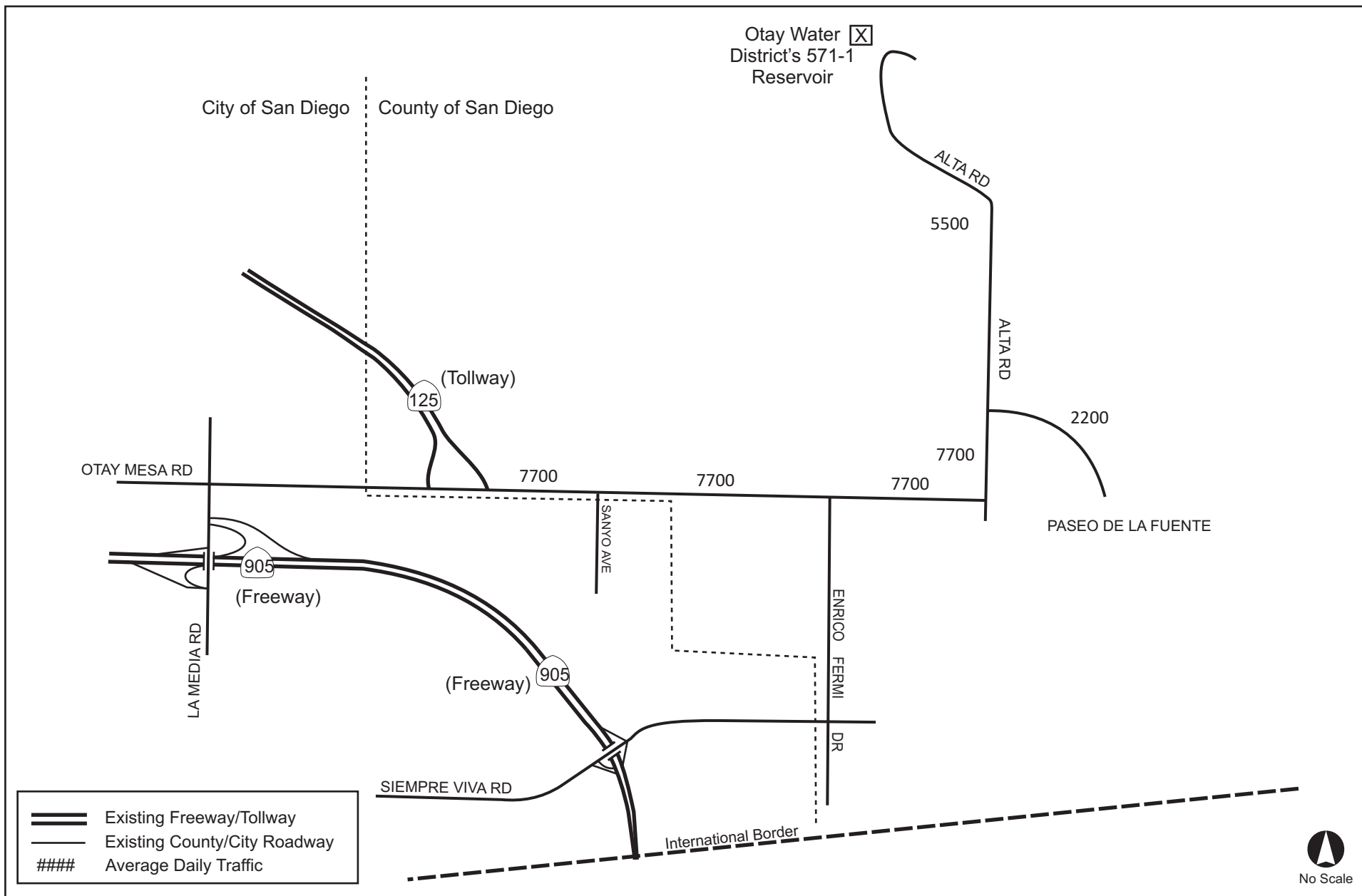


FIGURE 3.10-5
Construction Year (2020) Without Proposed Project Average Daily Traffic Volumes

Source: VRPA 2015

100032058

Otay Mesa Conveyance and Disinfection System Project

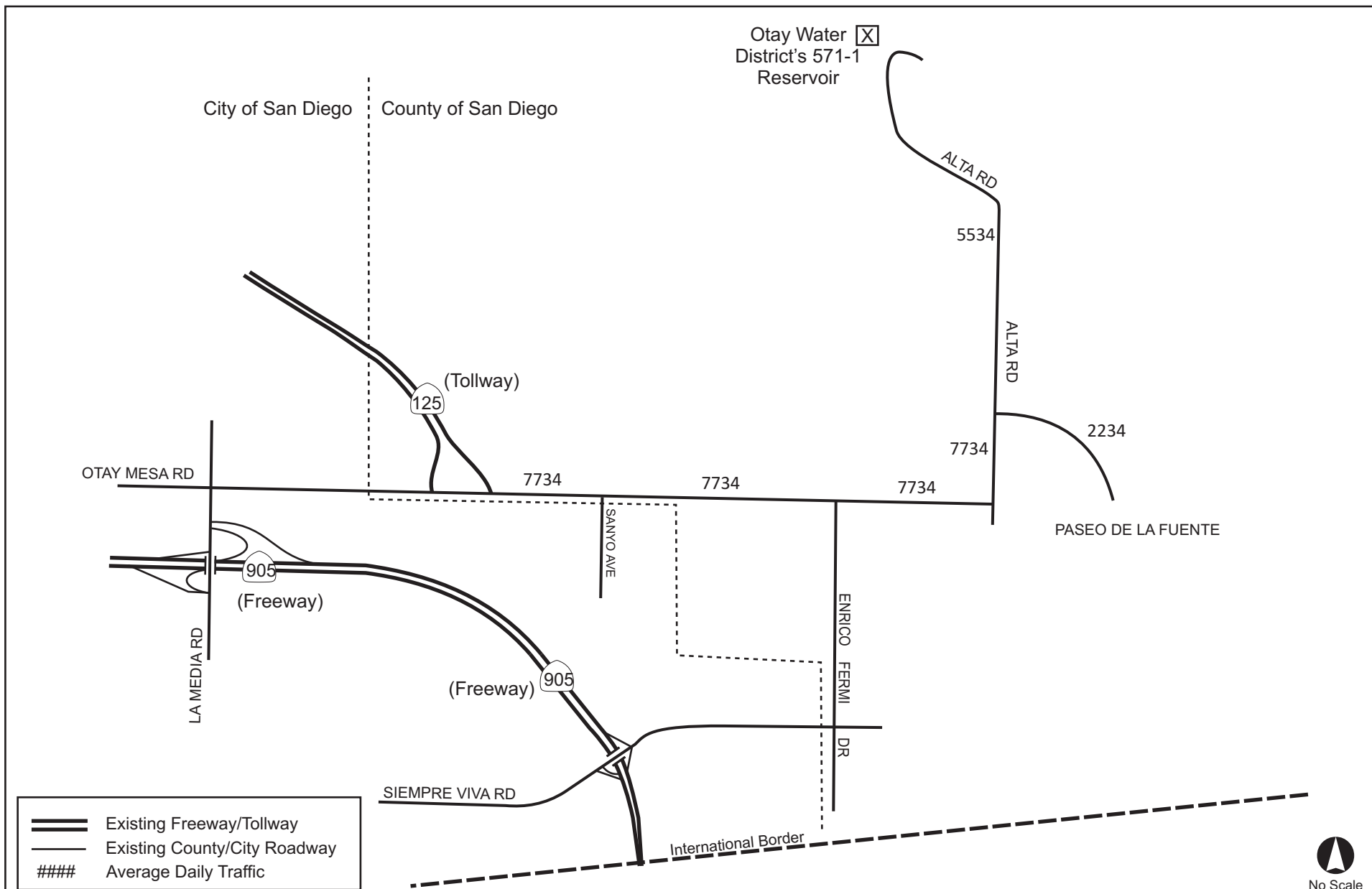


FIGURE 3.10-6
Construction Year (2020) Plus Proposed Project Average Daily Traffic Volumes

Source: VRPA 2015

100032058

Otay Mesa Conveyance and Disinfection System Project

Table 3.10-3 Project Roadway Segments Operation

Street Segment	Classification	Capacity at LOS E	Existing (2014)			Construction Year (2020)			Construction Year (2020) Plus Project				Level of Impact	Recommended Mitigation
			Volume	LOS	V/C	Volume	LOS	V/C	Volume	LOS	V/C	Proj. V/C Inc.		
Otay Mesa Road														
I-215 to Sanyo Avenue	Major Road with Intermittent Turn Lane	34,200	7,000	A	0.20	7,700	A	0.21	7,734	A	0.23	0.03	None	None
Sanyo Avenue to Enrico Fermi Drive	Community Collector with Intermittent Turn Lane	19,000	7,000	C	0.37	7,700	C	0.38	7,734	C	0.41	0.04	None	None
Enrico Fermi Drive to Alta Road	Community Collector with Intermittent Turn Lane	19,000	7,000	C	0.37	7,700	C	0.38	7,734	C	0.41	0.04	None	None
Alta Road														
Otay Mesa Road to Paseo de la Fuente	Community Collector with Intermittent Turn Lane	19,000	7,000	C	0.37	7,700	C	0.38	7,734	C	0.41	0.04	None	None
Paseo de la Fuente to Roll Reservoir	Community Collector with Intermittent Turn Lane	19,000	5,000	B	0.26	5,500	B	0.27	5,534	B	0.29	0.03	None	None
Paseo de la Fuente														
Alta Road to southern terminus cul-de-sac	Major Road with Raised Median	37,000	2,000	A	0.05	2,200	A	0.06	2,234	A	0.06	0.01	None	None

LOS = Level of Service; V/C = Volume to Capacity ratio; Proj. V/C Inc. = Project increase in V/C as compared to the corresponding project condition

Source: VRPA 2015

Lane Closures for Project Construction

The construction period for Alternatives 1, 2, or 3, and associated facilities would require lane closures for Alta Road and Paseo de la Fuente. Lane closures would restrict traffic to one lane roadways, which could increase wait times and increase potential for accidents due to atypical driving conditions. Therefore, lane closures associated with the proposed project would result in a potentially significant impact. However, prior to construction, a County of San Diego-approved traffic control plan would be prepared for the project, consistent with Haz-SCP-2 described in Section 3.10.4 above. The traffic control plan would identify traffic control features required to manage construction activity in the public roadway right-of-way, including barriers, cones, signing, and pavement marking, as appropriate. As recommended in the TIS (VRPA 2015), the following requirements would be included in the traffic control plan:

- 1) In the event that one lane of traffic would require closure during construction along Alta Road or Paseo de la Fuente, flaggers shall be required to maintain traffic control during shared-lane operations.
- 2) Due to the relatively higher level of traffic along Alta Road, construction activities along this roadway shall be limited to avoid peak traffic hours.
- 3) Due to relatively light levels of traffic along Paseo de la Fuente, construction activity along this roadway shall not be restricted during peak traffic hours.
- 4) In cases where a single lane of traffic controlled by a flagger is used, roadways shall be restored to normal operating conditions when construction is not taking place.

Compliance with Haz-SCP-2 and the recommendations of the project-specific TIS (VRPA 2015) would reduce the potential for the proposed project to conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. Effects would be less than significant.

Issue 2: Conflict with an Applicable Congestion Management Program

Would implementation of Alternatives 1, 2, or 3, or associated facilities conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highway?

In accordance with the SANDAG's CMP, projects that generate over 2,400 ADT or 200 peak hour trips, must comply with the traffic study requirements of SANDAG's CMP. As shown in Table 3.10-3, the proposed project would not exceed either of these thresholds, as 734 trips is the maximum increase that would occur under the proposed project. Therefore, the proposed project is not subject to a CMP traffic study analysis. Effects would be less than significant.

Issue 3: Hazardous Design Features

Would implementation of Alternatives 1, 2, or 3, or associated facilities substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

The proposed project does not include the construction of new roadways or the improvement of existing roadways. Alternatives 1, 2, and 3, and associated facilities would primarily be located within existing or proposed roadways, dirt roads, disturbed areas and/or utility rights-of-way. In addition, compliance with Haz-SCP-2 and the recommendations of the project-specific TIS (VRPA 2015) would require measures to be in place during construction in order to maintain safety. Therefore, the proposed project would have less than significant effects related to hazards due to a design feature or incompatible uses.

Issue 4: Inadequate Emergency Access

Would implementation of Alternatives 1, 2, or 3, or associated facilities result in inadequate emergency access?

Implementation of Alternatives 1, 2, and 3, and associated facilities would require construction along Alta Road and Paseo de la Fuente, resulting in partial road closures. Road closures could hinder the flow of traffic and could delay adequate emergency access and egress in and around the construction site. Therefore, the construction of the proposed project could potentially impact emergency evacuation plans, creating a potentially significant impact. However, compliance with Haz-SCP-2 and the recommendations of the project-specific TIS (VRPA 2015) would reduce the effects from road closures on emergency access to a less than significant level.

The proposed project must comply with the emergency travel time requirements specified in the County General Plan. Travel time is defined as the estimated time it would take for a responding agency (i.e., the San Diego County Sheriff's Department, San Diego Rural Fire Protection District, and California Department of Forestry and Fire Protection [Cal Fire]) to reach the farthest structure in the proposed project, which would be the potential pump station/meter station/disinfection facility building located adjacent to the United States-Mexico border. The proposed project would be subject to state and local building and fire codes, and would be reviewed for consistency with the Multi-Jurisdictional Hazard Mitigation Plan, the San Diego County Emergency Operations Plan, and any other applicable plans regarding emergency access. Compliance with these plans would reduce the potential for operation of the proposed project to have a significant effect on the environment. Effects would be less than significant.

Issue 5: Alternative Transportation Facilities

Would implementation of Alternatives 1, 2, or 3, or associated facilities conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

The proposed project would not conflict with existing policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities because it does not propose to construct or improve any roadways or alternative transportation facilities in the project area. Under existing conditions, the majority of roadway segments in the project study area do not include pedestrian or bicycle facilities because they are located in an undeveloped area of San Diego County with little pedestrian and bicycle traffic. Implementation of the proposed project would not result in changes to existing alternative transportation facilities within the project area or conflict with an adopted plan for the provision of alternative transportation facilities.

The proposed project would temporarily increase traffic during construction. However, compliance with Haz-SCP-2 and the recommendations of the project-specific TIS (VRPA 2015) would require measures to

be implemented during construction to maintain safety associated with all modes of transportation, including pedestrian and bicycle activity. Alternatives 1, 2, and 3 and associated above-ground facilities would not generate operational traffic, with the exception of routine maintenance and repairs. Therefore, effects would be less than significant.

3.10.5.2 No Action Alternative

Under the No Action Alternative, no construction, including pipelines or related infrastructure, would occur and the project area would remain in its current condition. Therefore, the No Action – No Project would not result in any effects related to circulation system performance, conflicts with an applicable congestion management program, hazardous design features, inadequate emergency access, and alternative transportation facilities because no construction would occur.

3.10.6 Mitigation Measures

Effects related to circulation system performance, consistency with applicable transportation plan or CMP, increased traffic hazards, inadequate emergency access and alternative transportation facilities would be less than significant. No mitigation measures are required.

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Chapter 4 CUMULATIVE IMPACTS

4.1 Introduction

Both NEPA and CEQA review and analyze the cumulative effects of a project in conjunction with other closely related past, present, and reasonably foreseeable future projects. The following discussion examines the potential cumulative effects of the proposed project.

4.1.1 Regulatory Framework

4.1.1.1 CEQA

The CEQA Guidelines Section 15355 define a cumulative impact as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.”

Section 15130(a) of the CEQA Guidelines requires a discussion of cumulative impacts of a project “when the project’s incremental effect is cumulatively considerable.” Cumulatively considerable, as defined in CEQA Section 15065(a)(3), “means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.” Section 15130(a) clarifies that when a project’s incremental effect is not cumulatively considerable “a lead agency need not consider that effect significant, but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable.”

The evaluation of cumulative impacts as required by CEQA Section 15130(b)(1) is to be based on either (A) a list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those impacts outside the control of the agency, or (B) a summary of projections contained in an adopted local, regional, or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. The following evaluation of cumulative impacts is based on the list method described in Section 15130(b)(1)(A), as presented in Table 4-2 below.

4.1.1.2 NEPA

CEQ regulations describe the proper assessment of cumulative impacts in NEPA documents. CEQ’s regulations explicitly state that cumulative impacts must be evaluated along with the direct and indirect effects of the proposed project and its alternatives. “Cumulative impact” is defined in CEQ’s NEPA regulations as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR

1508.7). CEQ interprets this regulation as referring only to the cumulative impact of the direct and indirect effects of the proposed project and its alternatives when added to the aggregate effects of past, present and reasonably foreseeable future actions.

In addition, CEQ interprets the NEPA regulations on cumulative effects as calling for analysis and a concise description of the identifiable present effects of past actions to the extent they are relevant and useful in analyzing whether the reasonably foreseeable effects of a proposed project and its alternatives may have a continuing, additive and significant relationship to those effects. Scoping is used to determine what information is necessary for a cumulative effects analysis, and the extent to which “it is reasonable to anticipate a cumulative significant impact on the environment” (40 CFR 1508.27[b][7]). The Supreme Court has also emphasized that agencies may properly limit the scope of their cumulative effects analysis based on practical considerations (*Robertson v. Methow Valley Citizens Council*, 490 U.S. 332 [1989]). The CEQ regulations provide for explicit documentation of such practical considerations when there is incomplete or unavailable information that is relevant to reasonably foreseeable significant adverse impacts (40 CFR 1502.22).

4.1.1.3 Methodology

The geographic scope of the cumulative impact analysis varies depending upon the specific environmental issue being analyzed. Table 4-1 summarizes the geographic scope of the analyses for the cumulative issues analyzed in this chapter. The geographic scope defines the geographic area within which projects may contribute to a specific cumulative impact. Analysis must consider past, present, and probable future projects within the defined geographic area for a given cumulative issue.

The list of present and foreseeable future projects for the cumulative analysis was created through a review of the County of San Diego Permit Database and internet web sites. Table 4-2 describes the cumulative projects that are considered in the cumulative analysis. The table lists the approved or planned projects within the County of San Diego and surrounding area that were considered in the cumulative analysis for the proposed project. This list includes all approved or planned projects within the surrounding area as of NOP/NOI publication date for the proposed project (November 14, 2014), and their status. Figure 4-1 shows the locations of the projects in relation to the proposed project.

Table 4-1 Geographic Scope of Cumulative Impact Analyses	
Environmental Issue	Geographic Scope of Cumulative Impact Analyses
Air Quality	The geographic scope of cumulative impact analysis for criteria air pollutants and air quality plans is the San Diego Air Basin. The geographic scope for cumulative impacts relative to sensitive receptors is the Otay Subregional Planning Area. Impacts relative to objectionable odors are limited to the area immediately surrounding the odor source and are not cumulative in nature because the air emissions that cause odors disperse beyond the source of the odor.
Biological Resources	The geographic scope of cumulative impact analysis regarding species, sensitive natural communities, federally protected wetlands, and the movement of wildlife species includes the San Diego County region.
Cultural and Paleontological Resources	The geographic context for the analysis of cumulative impacts to archaeological resources, historic resources, paleontological resources, and human remains includes the San Diego County region, which has a similar archaeological, ethnohistoric, historic, and prehistoric setting as the project site.
Environmental Justice	The geographic context for the analysis of cumulative impacts for environmental justice is CT 100.14, CT 100.15, and CT 213.02, located in the community of Otay Mesa near the United States-Mexico border.

Table 4-1 Geographic Scope of Cumulative Impact Analyses

Environmental Issue	Geographic Scope of Cumulative Impact Analyses
Geology and Soils	The geographic context for the analysis of cumulative impacts relative to soil erosion encompasses the Tijuana and Otay Hydrologic Units. Impacts relative to seismic hazards and other geologic/soil conditions (i.e. fault rupture, ground shaking, ground failure, liquefaction/collapse, landslides, lateral spreading, subsidence, and expansive soils) are generally site-specific.
Greenhouse Gases (GHG)	Due to the nature of assessment of GHG emissions and the effects of climate change, impacts can currently only be analyzed from a cumulative context; therefore, the geographic scope for the cumulative analysis of GHG emissions is the global atmosphere.
Hazards and Hazardous Materials	The geographic context for the analysis of cumulative impacts relative to the transport, use and disposal of hazardous materials, and associated accidental releases, encompasses nearby facilities that regularly require the use of disposal of hazardous materials and the roadways and freeways used by vehicles transporting hazardous materials to and from the project area. Impacts relative to listed hazardous materials sites are generally specific to the project site. The geographic context for the analysis of cumulative impacts relative to emergency response and evacuation plans is San Diego County. Wildland fire cumulative impacts are considered for the San Diego County region. The geographic context for the analysis of airport hazards is the area within the Brown Field Airport Land Use Compatibility Plan Area of Influence.
Hydrology/ Water Quality	The geographic context for the analysis of cumulative impacts relative to water quality standards and alteration of drainage patterns encompasses the Tijuana HU and Otay HU. The geographic context for the analysis of cumulative impacts relative to groundwater recharge and supplies is the Otay Valley groundwater basin. Impacts relative to mudflows, dam inundation, tsunamis, seiches, and flood hazard areas are generally specific to area in which inundation may occur.
Noise/Vibration	The area of cumulative impacts that would be considered for the noise and vibration cumulative analysis is limited to cumulative projects within the immediate vicinity of the proposed project site. Exposure to aircraft noise is also a localized impact and the area of cumulative impact that would be considered for aircraft impacts would be those projects located within the Brown Field Airport Land Use Compatibility Plan noise contour area.
Traffic	The cumulative study area associated with traffic and level of service standards, traffic hazards, alternative transportation, and emergency access is the study area determined by the project-specific traffic impact analysis (VRPA 2015). Impacts related to aircraft traffic are generally specific and limited to the Brown Field Airport Land Use Compatibility Plan Area of Influence.

Table 4-2 List of Cumulative Projects in Vicinity of Proposed Project

Cumulative Project Number	Assessor's Parcel Number	Address/Location	Status/ Permit Type	Project Description
1	648-070-21-00	Southeast of the intersection of Alta Road and Airway Road	Tentative Map 5505R	Otay Business Park – Development of a 162-acre property that would include 58 industrial lots, two drainage/detention basin lots, open space, and 25 acres of on-site roads.
2	648-070-03-00, 648-080-27-00	Southeast of the intersection of Alta Road and Otay Mesa Road	Tentative Map 5405R	Otay Crossings Commerce Park – Development of a 312-acre property that would include 56 industrial lots, three open space lots, and two lots for temporary uses pending the construction of SR-11 and Otay Mesa East POE.
3	648-070-17-00	Southwest of the intersection of Alta Road and Airway Road	Tentative Map 5566	Development of an 80-acre site with 23 industrial lots on 66 acres, one detention basin lot on 2 acres, and provides approximately 12 acres of on-site roadways. The precise nature of land uses will be identified in the future.

Table 4-2 List of Cumulative Projects in Vicinity of Proposed Project

Cumulative Project Number	Assessor's Parcel Number	Address/Location	Status/ Permit Type	Project Description
4	648-080-27-00, 648-070-03-00, 648-070-21-00, 648-070-14-00, 648-070-33-00, 648-070-09-00	SR-11 would span from SR-905 to the Otay Mesa East POE, located at the United States- Mexico border east of the intersection of Alta Road and Siempre Viva Road	Tentative Map 5405R, Tentative Map 5505R, Under Construction	SR-11 and Otay Mesa East POE – Construction of a new toll highway, with connectors to SR-905 and associated modifications to SR-905; the Otay Mesa East POE; and a Commercial Vehicle Enforcement Facility.
5	N/A	South of the United States-Mexico border, at the intersection of Colina del Sol and Calle 12 Nte.	Conceptual Design Phase	Future Mexico East POE – Construction of a new border crossing facility in Mexico, connecting to the future Otay Mesa East POE.
6	648-070-33-00	Southwest of the intersection of Alta Road and Otay Mesa Road	Approved/ Completed	Copart Salvage and Auto Auction – Storage and sale of automobiles on a 38 acre site.
7	648-070-09-00	7113 Otay Mesa Road	Approved/ Completed	Travel Plaza – Storage and sale of automobiles on an 81 acre site.
8	648-040-35-00	7505 Paseo de la Fuente	Tentative Parcel Map 21140	Development of three residential lots and off-site improvements including roads, turn lanes, raised medians, and a bike lane.
9	648-040-36-00	7522 Paseo de la Fuente	Approved/ Completed	Vulcan Asphalt Plant – A concrete and asphalt batch plant located on a 13-acre site.
10	648-040-47-00, 648-040-43-00, 648-040-46-00	606 de la Fuente Court	Approved/ Completed	Otay Mesa Energy Center – Natural gas fired, combined-cycle electricity power plant.
11	648-040-11-00, 648-040-23-00, 648-040-28-00, 648-040-17-00, 648-040-27-00, 648-040-31-00, 648-040-34-00, 648-040-51-00	Northwest of the intersection of Alta Road and Paseo de la Fuente	Major Use Permit Modification 06-074, Major Use Permit 98-001	Otay Mesa Auto Transfer Facility/Salvage Yards – The recycling, sales, and storage of automobiles, scrap operations, wood and green waste recycling facilities, outdoor storage area, and 30,000 square feet of usable open space.
12	648-040-20-00, 648-040-25-00, 648-080-34-00, 648-080-35-00	Northwest of the intersection of Alta Road and Paseo de la Fuente	Tentative Map 5549	International Industrial Park – The project would subdivide 170 acres of vacant land into 10 parcels for technology/ business park use. 133 acres would be developed, 27 acres placed in open space, and 10 acres used for circulation streets.
13	646-040-20-00, 646-080-16-00, 648-011-04-00	480 Alta Road	Approved/ Completed	Richard J. Donovan Correctional Facility – A medium security prison on approximately 780 acres, including housing units, fitness areas, and associated inmate facilities.
14	648-040-26-00	480 Alta Road	Major Use Permit Modification	Richard J. Donovan Correctional Facility Level II Infill – Development of a single correctional facility on a 79-acre site, or a correctional facility complex on a 105-acre site, to add to the existing Richard J. Donovan Correctional Facility. Development would include the addition of either 792 beds or 1,594 beds to the site.

Table 4-2 List of Cumulative Projects in Vicinity of Proposed Project

Cumulative Project Number	Assessor's Parcel Number	Address/Location	Status/ Permit Type	Project Description
15	760-110-24-00	446 Alta Road	Approved/ Completed	Otay Mesa Detention Facility – A medium security facility consisting of four inmate housing dormitories, a mess hall, several classrooms, and staff administration offices. The facility has a capacity of 360 beds.
16	760-110-24-00	446 Alta Road	Approved/ Completed	George F. Bailey Detention Facility – A maximum security facility that includes six housing units, a medical area, and inmate processing area, and an administrative area. The facility has a capacity of 1,380 inmates and 220 staff members.
17	648-050-13-00, 648-080-21-00, 648-080-22-00, 648-090-01-00, 648-090-04-00	Approximately 0.5 mile east of Paseo de la Fuente	Conceptual Design Phase	East Otay Mesa Recycling and Landfill Facility – Development of a recycling center and class III solid waste landfill occupying 340 acres. The site would include a recycling collection center, lined landfill, scale area, borrow and stockpile area, leachate collection system, chipping and grinding area, storm water retention facilities, a new access route from Paseo de la Fuente, a visitors center, office building, and landfill gas collection and recovery system.
18	648-040-56-00	7488 Calzada de la Fuente	Commercial Structure Plan Check Permit PDS2013-COMACC-000221, Major Use Permit 3301 06-074-01	Otay Mesa Detention Facility – Development of two detention facility buildings totaling 512,982 square feet in two phases. Phase I includes a 1,492 bed detention facility, a dining area, classrooms, administrative offices, parking spaces, and an outdoor recreation area. Phase II would increase capacity by 1,408 beds, and include additional parking spaces and a recreational area.
19	648-010-31-00	440 Alta Road	Approved/ Completed	San Diego Regional Firearms Training Facility – An outdoor gun range and police training center on an approximately 12 acre site.

4.2 Cumulative Effects of Alternatives 1, 2, and 3

4.2.1 Air Quality

Conformance to Federal and State Ambient Air Quality Standards

The SDAB is designated as being in non-attainment for PM₁₀, PM_{2.5}, and O₃. Therefore, the baseline cumulative impact to the SDAB due to air pollution from stationary and mobile source emissions associated with basin-wide polluting activities is significant for these pollutants. The SDAB is in attainment for SO_x and CO; therefore, the baseline cumulative impact for these pollutants is less than significant.

For construction-related impacts, the geographic context for criteria pollutant emissions includes areas adjacent to the project area identified for Alternatives 1, 2, and 3. A localized pollutant concentration analysis is applicable because construction emissions would be temporary. Pollutant emissions would

disperse or settle out following construction and would not contribute to long-term concentrations of emissions in the SDAB. The SDAPCD has not established screening thresholds for localized cumulative impacts. The County of San Diego's Guidelines for Determining Significance provide guidance for assessing the impact of cumulative emissions of criteria pollutants. As stated in the County guidelines, cumulative air quality impacts are typically due to projects adjacent to each other implementing simultaneous construction. According to these guidelines, a project would result in a cumulative impact if a project, alone or in combination with the construction of another cumulative project, would exceed the significance thresholds listed in Section 3.1, Table 3.1-5, during construction. A cumulatively considerable impact would also occur if a project, alone or in combination with other cumulative projects, would exceed the federal de minimis levels listed in Section 3.1, Table 3.1-3.

Several potential cumulative projects would be located adjacent to Alternatives 1, 2, and 3 and may be under construction concurrently with the proposed project: the SR-11/Otay Mesa POE project; new facilities at the Richard J. Donovan Correctional Facility (addition of 792 beds or 1,594 beds to the site); development of two new business parks (Otay Crossings Commerce Park and Otay Business Park) and the East Otay Mesa Recycling and Landfill Facility project. However, the majority of construction of the proposed project would be linear and would only take place in one area for a short period of time. Approximately 120 feet of pipeline would be installed per day. The majority of construction would occur hundreds of feet from the adjacent cumulative projects. Additionally, as shown in Section 3.1, Table 3.1-7, construction emissions would be well below all significance thresholds. In addition, the proposed project would be constructed within an approximately 10-month period and concurrent construction with adjacent cumulative projects would be short-term. In addition, compliance with the requirements of Air-SCP-1, Air-SCP-2, and Air-SCP-3 would likely result in lower emissions emitted during construction. Therefore, construction of Alternatives 1, 2, and 3 would not result in a cumulatively considerable contribution to a potentially significant cumulative impact during construction.

Following construction, according to the County of San Diego significance threshold, a project would result in a significant cumulatively considerable contribution to an air quality impact if the project does not conform to the RAQS or if the project has a significant direct impact to air quality. As discussed in Section 3.1.5.1, Issue 4, the proposed project would not conflict with the RAQS or SIP. Additionally, as shown in Section 3.1, Table 3.1-8, operational emissions from Alternatives 1, 2, and 3 would not exceed the significance thresholds for any pollutant. In addition, compliance with Ene-PDF-1 through Ene-PDF-4, which require high-efficiency pumps and motors, energy-efficient lighting, pump efficiency tests, and soft starts and stops to all project pumps and motors, would further reduce operational emissions. Therefore, implementation of Alternatives 1, 2, and 3 would not result in a cumulatively considerable contribution.

Impacts to Sensitive Receptors

The geographic context for the analysis of cumulative impacts relative to sensitive receptors is the Otay Subregional Planning Area. Cumulative growth in the planning area would have the potential to increase congestion and potentially result in CO hot spots. However, as described in Section 3.1.5.1, Issue 3, the increase in vehicle trips associated with the implementation of Alternatives 1, 2, and 3 would not result in significant congestion at any intersection during construction, when the project trip rate would be the highest. Operational vehicle trips would be minimal; a maximum of four trips per day. Therefore, implementation of Alternatives 1, 2, and 3 would not result in a cumulatively considerable contribution to a potentially significant cumulative impact related to CO hot spots.

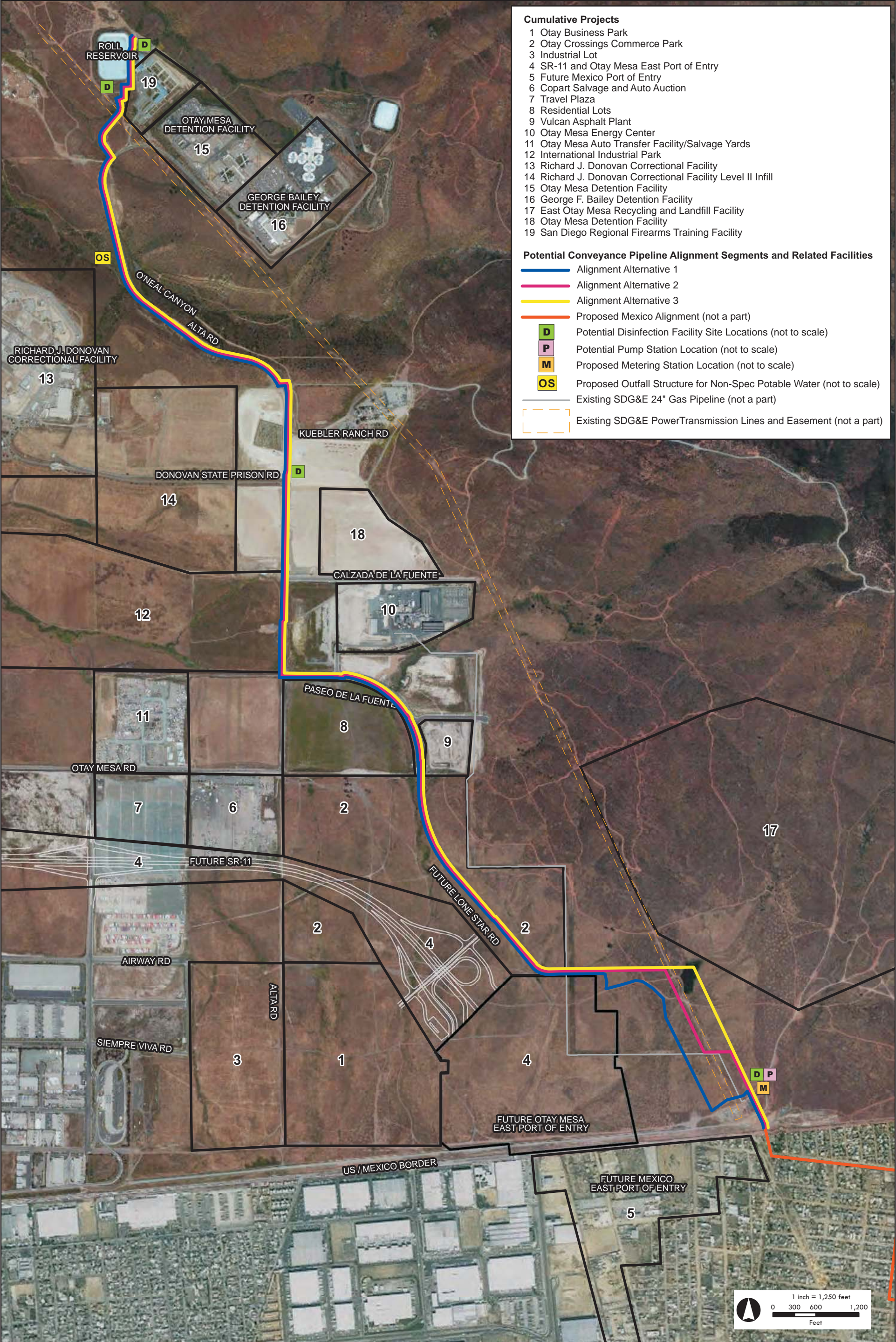


FIGURE 4-1
Cumulative Projects Analysis

Source: Atkins, 2014; San Diego County GIS, 2012; ESRI, 2014
Note: Project boundaries are approximate.

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The cumulative projects would also have the potential to result in a significant cumulative impact associated with sensitive receptors if, in combination, they would expose sensitive receptors to a substantial concentration of TACs that would significantly increase cancer risk. Cumulative projects include a new POE and industrial development, which would have the potential to generate DPM from truck trips. However, impacts would generally be localized and not cumulative in nature because impacts related to a particular source of TACs would be limited to the proximity of the source. Additionally, cumulative projects would be required to comply with the CARB's recommendations for siting new sensitive receptors and requirements for reducing diesel emissions. Stationary sources in the SDAB would be required to obtain operating permits from the SDAPCD and comply with emission thresholds for TACs or hazardous air pollutants. The cumulative impact associated with sensitive receptors would be less than significant.

Objectionable Odors

The geographic context for the analysis of cumulative impacts related to objectionable odors is generally limited to the area in proximity to the source and odors are not cumulative in nature. As the emissions that cause odors disperse, the odor becomes less and less detectable. Nuisance odor issues are regulated by the SDAPCD through Rule 51. While the proposed project would not be a source of odor complaints, the proposed East Otay Recycling and Landfill Facility would create objectionable odors. However, the East Otay Mesa Specific Plan established a Landfill Buffer Overlay, consisting of a 1,000-foot-wide buffer adjacent to the site to the west to minimize conflicts with the landfill (County of San Diego 2010). None of the other adjacent cumulative projects propose land uses that are a typical source of odor complaints. Therefore, a cumulatively significant impact associated with objectionable odors would not occur.

4.2.2 Biological Resources

Sensitive Plant and Wildlife Species and Riparian or Other Sensitive Habitats

The geographic context for the analysis of cumulative impacts to sensitive plant and wildlife species and sensitive habitats include the natural habitats within the San Diego County region. A cumulative impact would occur if there is a regional loss of sensitive plants, animals, and vegetation communities. Direct and indirect construction activities, such as trenching and grading, and indirect operational activities, such as exposure to exotic plants, associated with the proposed project would have the potential to impact sensitive species and habitats. It is very important to note, however, that the extent of the project's temporary and permanent impacts to sensitive species and riparian and other sensitive habitat, is very small. In addition, these impacts occur in an area where extensive acreages have been set aside as open space for the purposes of habitat conservation. The County of San Diego, the City of San Diego, as well as other public agencies have developed and implemented an MSCP (County of San Diego 2014), which was approved by the USFWS in 1996. Currently 74,347 acres of habitat are preserved in the South County Subarea of the MSCP. Several thousand acres of conserved habitat are located immediately east of the project area.

The proposed project would implement mitigation measures Bio-1 through Bio-31 to reduce the proposed project's impacts to sensitive species and habitat. The proposed project would salvage and replant rare and sensitive plants, survey for sensitive animal species and avoid them as necessary, and restore native vegetation. Implementation of these measures would ensure long-term sustainability of sensitive species and their associated habitats.

Cumulative and future projects would have the potential to contribute to cumulative direct and indirect impacts to sensitive plants and animals and sensitive habitats. However, CEQA requires that each of the identified cumulative projects, and future development, analyze and mitigate impacts to sensitive habitat and/or species as a result of its development. Additionally, each of the identified cumulative projects would be required to comply with federal, state, and local agencies and regulations, such as the MBTA, the federal and state ESA, CDFW, and MSCP Subregional Plan. As with the proposed project, the impacts of these cumulative projects will be evaluated within the context a subregion where an MSCP is in place and 74,347 acres of habitat in the South County alone. Compliance with federal, state, and local regulations, taken together with the extensive tracts of conserved habitat already in place, will prevent significant cumulative impacts to sensitive habitat.

Federally Protected Wetlands

The geographic context for the analysis of cumulative impacts to federally protected wetlands includes the San Diego County region. Direct and indirect construction activities associated with the proposed project, such as fill and hydrological interruption, and indirect operational activities, such as erosion and storm water runoff, would have the potential to impact federally protected wetlands. The proposed project would implement mitigation measures Bio-32 through Bio-35 to reduce impacts to federally protected wetlands to below a level of significance. By following the mitigation measures, the proposed project would install drainage catchment structures, revegetate jurisdictional waters and wetlands, implement restoration ratios, and ensure there are no diversions of flow. The current project, therefore, would not contribute to cumulative effects to wetlands. Future development projects would have the potential to contribute to cumulative direct and indirect impacts to federally protected wetlands. However, each of the identified cumulative projects and future development would be required to comply with federal regulations, such as the USACE CWA Section 404 permitting process, for impacts to any jurisdictional waterways.

Wildlife Movement Corridors and Nursery Sites

The geographic context for the analysis of cumulative impacts to wildlife movement corridors and nursery sites includes the San Diego region. The project therefore has no cumulative impact to these features. While construction and operation of the proposed project would not impact wildlife movement, future development would have the potential to impact wildlife movement and nursery sites. However, future development projects would be required to comply with the San Diego MSCP Subregional Plan and the MBTA. A major goal of the MSCP is the preservation of wildlife movement corridors and habitat essential for sensitive species nesting. Future development in the southern portion of the County will be evaluated with these goals in mind. Therefore, future development review under the auspices of the South County Subarea Plan will ensure that cumulative impacts to wildlife movement corridors and nursery sites are less than significant.

4.2.3 Cultural Resources

Historical Resources

The geographic context for cumulative impacts to historical resources is San Diego County. The San Diego County General Plan provides goals and policies for the preservation of the County's historic sites, buildings, and districts (County of San Diego 2011a). The San Diego County General Plan Policy COS-8.1 encourages the preservation and/or adaptive reuse of historic sites, structures, and landscapes as a means of protecting important historic resources as part of the discretionary action, and encourages the preservation of historic structures identified during the ministerial application process (County of San

Diego 2011a). Similar to the proposed project, past, present, and reasonably foreseeable future developments would be required to comply with the policies in the San Diego County General Plan related to historical resources. Prior to issuance of a building and/or grading permit, other future development projects would be required to demonstrate that the project includes adequate mitigation measures to mitigate potentially significant impacts to historical resources in accordance with CEQA (Atkins 2015b)

Archaeological Resources

The geographic context for the analysis of cumulative impacts to archaeological resources is considered to be the San Diego County region. Numerous archaeological sites throughout the county and overall region provide evidence of human occupation in the project area(Atkins 2015b). These sites contain artifacts and features of value in reconstructing cultural patterns of prehistoric life. Due to the scarcity of archaeological resources and the potential for construction activities, such as grading and trenching, associated with future development projects to impact these resources, a significant cumulative impact to archaeological resources exists.

Eight known archaeological resources are located within the project's APE. As discussed in Section 3.3.5.1, Issue 2, three of the eight sites would potentially be affected due to the project's construction footprint. The remaining five sites were either evaluated to not be significant or would not be affected by the proposed project. In addition, the presence of these resources indicates the potential for the project site to contain unrecorded, subsurface resources. Construction activities, such as trenching and grading, associated with the proposed project have the potential disturb or damage unknown subsurface resources, which could result in potential impacts to archaeological resources. However, with implementation of mitigation measures Cul-1 through Cul-3, which require archaeological and tribal monitoring, avoidance, significance evaluation, and recovery and curation, the proposed project would not result in significant impacts to archaeological resources located within the project's APE. Therefore, the proposed project's contribution to a significant cumulative impact to archaeological resources would not be cumulatively considerable.

Paleontological Resources

The geographic context for the analysis of cumulative impacts to paleontological resources consists of the San Diego County region. According to the San Diego County General Plan, there are a number of distinct geological rock units (i.e., formations) within San Diego County that contain paleontological resources, such as bones, teeth, shells, and wood (County of San Diego 2011a). Development within the San Diego County region has resulted in disturbances to these geologic formations and the fossils that they contain. However, development has also led to the discovery of many fossil sites that have been documented and which have been added to the natural history records for the region. Therefore, future development in San Diego County could impact unrecorded paleontological resources, which would result in a significant cumulative impact.

Construction activities associated with the proposed project would include trenching and grading activities, which would have maximum vertical depths that average approximately 10 feet below current ground surface, with possible depths of up to 25 feet below current ground surface in some areas. These trenching depths have the potential to reach underlying formations that could contain unknown buried paleontological resources, which could result in a potentially significant impact (Atkins 2015b). However, with implementation of mitigation measures Cul-4 through Cul-8, which include worker training, avoidance, and significance evaluation, the proposed project would not result in significant impacts to

paleontological resources. Therefore, the proposed project's contribution to a significant cumulative impact to paleontological resources would not be cumulatively considerable.

Human Remains

The geographic context for the analysis of cumulative impacts to human remains is the San Diego County region. The presence of numerous archaeological sites throughout the region indicates that prehistoric human occupation occurred throughout the region (Atkins 2015b). Additionally, historic era occupation of the area increases the possibility that humans were interred outside of a formal cemetery. Cumulative development projects would have the potential to encounter unknown, interred human remains during construction activities, which would result in significant cumulative impact.

While no human remains have been observed and no formal cemeteries are known within the project's APE, prehistoric and historic occupation is known within the APE and in the vicinity. Therefore, the proposed project may uncover and impact unrecorded human remains during construction activities. However, implementation of mitigation measure Cul-9, which requires compliance with California Health and Safety Code Section 7050.5 and California PRC Section 5097.98, would reduce impacts to a less than significant level. Therefore, the proposed project's contribution to a significant cumulative impact to human remains would not be cumulatively considerable.

4.2.4 Environmental Justice

Disproportionate Effects on Environmental Justice Communities

The geographic context for the analysis of cumulative impacts for environmental justice is CT 100.14, CT 100.15, and CT 213.02, located in the community of Otay Mesa near the United States-Mexico border. Significant and adverse construction and/or operation impacts associated with future development projects within CT 100.14, CT 100.15, and CT 213.02 that would disproportionately affect low-income or minority populations would result in significant cumulative impacts associated with environmental justice. Each of the CTs in the socioeconomic study area is considered an environmental justice community due to a minority population representing more than 50 percent of the total population for the CT. Development projects within these CTs would have the potential to impact a designated environmental justice community if environmental impacts disproportionately accrue to a minority population.

Due to the nature of the proposed project, the majority of impacts would occur during the construction period along the proposed pipeline route and at the associated facilities' locations. The level of effect would diminish once construction activities end. Operational impacts would result only from routine maintenance activities associated with the above-ground facilities, including from the maintenance of the pipeline itself. Maintenance activities include routine maintenance trips to the above-ground facilities, chemical supply deliveries from vendors, and bimonthly landscaping. As discussed in Section 3.1, Air Quality, and Section 3.7, Hazards and Hazardous Materials, operational impacts associated with air quality and routine transport, use, or disposal of hazardous materials would be less than significant under construction and operations. Further, according to the Otay Community Planning Area Land Use Map of the San Diego County General Plan, no residential land uses are designated in CT 100.14, CT 100.15, or CT 213.02 in the vicinity of the proposed project (County of San Diego 2012). All environmental impacts identified for the proposed project would be mitigated to a less than significant level as described in Section 3.1 through Section 3.10 of this EIR. Therefore, the proposed project's contribution would not be cumulatively considerable.

4.2.5 Geology and Soils

Exposure to Geologic Hazards, Soil Stability, and Expansive Soils

The geographic context for the analysis of impacts resulting from geologic hazards, unstable soils, and expansive soils is generally site-specific, rather than cumulative in nature. Potential impacts related to the proposed project are not additive with other projects and are therefore not cumulatively significant. Additionally, as discussed in Section 3.5, Geology and Soils, compliance with building codes and other applicable regulations, and implementation of the District's WRMP mitigation measure Geo-SCP-4, would reduce geologic hazards related to seismicity, slope stability, and expansive soils to less than significant levels. Although the proposed project and related projects would have potentially significant geological impacts requiring mitigation, these projects are geographically removed to the extent that a hazardous geologic event at one site would not necessarily occur at another site. Therefore, potential geological impacts would not be cumulatively significant.

Soil Erosion or Topsoil Loss

The geographic context for the analysis of impacts regarding soil erosion or topsoil loss encompasses the Tijuana and Otay HUs. Potentially cumulative impacts related to soil erosion or top soil loss are addressed in Section 3.8, Hydrology and Water Quality. As discussed in that section, future growth and redevelopment in the project area would result in an increase in impermeable surfaces, alteration of the hydrology of local streams and drainage, and grading and clearing of vegetation. All of these actions have the potential to contribute to a cumulative increase in erosion or topsoil loss. However, future development is subject to federal, state, and local runoff and erosion prevention requirements, and compliance with all applicable regulations and the BMPs would ensure that future development projects would not result in a significant erosion or topsoil loss impact. In addition, compliance with Geo-SCP-1, Geo-SCP-2, Geo-SCP-3, and Hyd-SCP-1, which would implement the geotechnical investigation recommendations and require additional construction and post-construction BMPs, would further reduce soil erosion. Therefore, a cumulative impact related to erosion or topsoil loss would not occur.

4.2.6 Greenhouse Gases

Direct and Indirect Generation of GHG

The geographic scope for the cumulative analysis of GHG emissions is the global atmosphere. Due to the nature of assessment of GHG emissions, impacts can currently only be analyzed from a cumulative context. Therefore, the analysis provided within Section 3.6, GHG Emissions, includes the analysis of both the project and cumulative impacts.

4.2.7 Hazards and Hazardous Materials

Routine Transport, Use, or Disposal of Hazardous Materials, and Accidental Release of Hazardous Materials

The geographic context for the analysis of cumulative impacts relative to the transport, use, and disposal of hazardous materials, and associated accidental releases, encompasses nearby facilities that regularly require the use of disposal of hazardous materials and the roadways and freeways used by vehicles transporting hazardous materials to and from the project area. Future growth in the East Otay Mesa area, including the proposed Otay Mesa East POE and East Otay Mesa Recycling and Landfill Facility projects, would likely result in an increase in the amount of hazardous materials transported, used,

treated, and disposed of in the area. Although each development site has potentially unique hazardous materials considerations, future developments would be required to comply with federal, state, and local statutes and regulations applicable to hazardous materials and be subject to enforcement by the appropriate regulatory agencies.

Future development in the East Otay Mesa area would potentially involve excavation, renovation, or demolition activities, which would subject construction workers to health and safety risks through exposure to hazardous materials. Future development projects would adhere to the applicable federal, state, and local requirements that regulate worker safety and exposure to agricultural pesticides, asbestos, lead, and other hazardous materials. In addition, implementation of mitigation measure Haz-1 would reduce project impacts associated with exposure of agricultural pesticides to below a level of significance. The proposed project would also implement Haz-SCP-1, requiring the construction contractor to submit an HMBP for the proposed project to comply with USDOT safety protocols. Therefore, the proposed project would not contribute to a regional cumulative impact.

Hazards to Schools and Existing Hazardous Material Sites

Impacts related to school sites and listing on a hazardous materials site are not cumulative in nature because impacts to individual projects would be site-specific. There are no existing or proposed schools within one-quarter mile of the project area. In addition, all hazardous material sites within one mile of the proposed project area have either gone through a remediation process and been designated with a “completed, case closed” cleanup status; are at a great enough distance from the proposed project area to result in a low potential impact; or do not pose a threat to human health, the environment, or nearby sensitive receptors. Therefore, the proposed project would not contribute to a cumulative regional impact.

Public and Private Airport Hazards

The geographic context for the analysis of airport hazards is the area within the Brown Field Airport Land Use Compatibility Plan Airport Influence Area. The Brown Field Airport is located approximately 2.5 miles west of the proposed project area. The proposed project area is not located within the Brown Field Airport Influence Area (Ricondo 2010). However, it is anticipated that future growth in the East Otay Mesa area, including the proposed SR-11, International Industrial Park, and Richard J. Donovan Correctional Facility Level II Infill projects, would be located within the Brown Field Airport Influence Area. The current project has a very minimal profile. It would not spur development in the vicinity of the airport. Its cumulative contribution to airport hazards would be insignificant.

Wildland Fires

The geographic context for the analysis of wildland fire is the San Diego County region. The majority of San Diego County, including the proposed project area, is located within areas that are very high risk for wildfires, which could expose buildings and people to significant loss, injury, or death (County of San Diego 2011a). San Diego County is responsible for fire prevention and to provide services such as plan review and construction inspections of new construction in accordance with current California building and fire codes. All applicable fire code and ordinance requirements, including the installation of sprinkler systems, fire-resistant building materials, standard driveway widths, and other features to ensure that buildings are constructed with all reasonable fire safety features, would be fully enforced. No additional development in the region would occur as a result of project implementation. The project’s cumulative contribution to wildland fire risk would be less than significant.

Emergency Response and Evacuation Plans

The geographic context for the analysis of cumulative impacts relative to emergency response and evacuation plans is San Diego County. The County is susceptible to a number of natural and human-caused hazards that require emergency response planning and emergency evacuation routes. Fortunately, comprehensive emergency response plans, such as the San Diego County Emergency Operations Plan and the San Diego County Multi-Jurisdiction Hazard Mitigation Plan, are developed and adopted, and are reviewed, rehearsed, and revised regularly. The cumulative projects identified in Table 4-2 would be designed or mitigated to avoid impacts to existing emergency response plans and routes, similar to the proposed project. In addition, the proposed project would comply with Haz-SCP-2, which would require the contractor to implement a traffic control plan to ensure adequate emergency access in and around the construction site. Thus, the proposed project, along with the cumulative projects, would not result in a significant cumulative impact.

4.2.8 Hydrology and Water Quality

Water Quality Standards and Degradation of Water Quality

Surface Water Quality

The geographic context for the analysis of cumulative impacts for water quality standards is the Tijuana and Otay HUs. Land disturbance and development activities are expected to continue in the vicinity of these watersheds. Even with the promulgation of the NPDES storm water regulations, land disturbance and development activities throughout these watersheds continue to contribute, however incrementally, to the overall water quality problems observed in runoff flows that discharge into watercourses, lagoons, and eventually the Pacific Ocean (Atkins 2015a). Therefore, the cumulative impact to the Otay and Tijuana watersheds due to downstream water pollution effects is significant.

Construction activities associated with the proposed project would have the potential to impact water quality. However, the NPDES General Construction Permit would require the proposed project's construction contractor to implement construction and post-construction BMPs in accordance with a SWPPP. In addition, as described in Hyd-SCP-1 from the District's WRMP, the selected contractor would be required to implement a Safety Plan for the transport, storage, use, and disposal of hazardous materials associated with proposed project construction activities. The plan would also identify construction BMPs to reduce impacts to surface water quality due to storm water runoff pollution from construction site.

For long-term operations associated with the proposed project that would involve the transport, storage, use, and disposal of hazardous materials, the District would prepare and implement an HMBP and obtain and comply with a DEH permit, as described in Hyd-PDF-1 from the WRMP. The HMBP would identify post-construction BMPs to reduce potential impacts to surface water quality due to storm water runoff pollution from the above-ground developed facilities. Provisions will be in place to ensure that rare discharges of non-spec water into the O'Neal Canyon occur with a volume and velocity that matches natural flows during rain events. Therefore, construction and operation activities associated with the proposed project would not result in a cumulatively considerable contribution to downstream water pollution effects within the cumulative impact area.

Groundwater Quality

The geographic context for the analysis of cumulative impacts relative to groundwater quality encompasses the Otay Valley groundwater basin. The quality of groundwater in Otay Valley Basin is

generally poor. Construction and operation activities from development projects within the Otay Valley groundwater basin could result in the discharge of pollutants, such as petroleum byproducts or pesticides, in storm water runoff, which would percolate into the groundwater basin and impact groundwater quality (Atkins 2014). Therefore, the cumulative impact to the Otay Valley groundwater basin due to potential water pollution effects is significant.

Construction and operation of the proposed project would potentially lead to discharges that could impact groundwater quality. However, implementation of Geo-SCP-2, Geo-SCP-3, Hyd-SCP-1, and Hyd-PDF-1 from the WRMP would reduce potential groundwater quality impacts due to storm water runoff pollution associated with construction and long-term operation and maintenance to a less than significant level. Therefore, implementation of the proposed project would not result in a cumulatively considerable contribution to groundwater quality impacts within the local cumulative impact area.

Groundwater Supplies and Recharge

The geographic context for the analysis of cumulative impacts for groundwater supplies and recharge is the Otay Valley groundwater basin. Development within the Otay Valley groundwater basin would increase the amount of impervious surface in the area, which would decrease the amount of recharge received by the groundwater table. Therefore, increased impervious areas associated with construction of cumulative development projects would result in a significant cumulative impact to groundwater recharge.

Due to the nature of the proposed pipeline, the majority of the pipeline area would be restored to pre-project conditions after construction. Thus, areas that were pervious before the construction of the pipeline would be restored to pre-project pervious conditions once the pipeline is installed. Implementation of the proposed project would result in minor additions of impervious surface to the Otay Valley groundwater basin from the construction of the associated above-ground facilities totaling approximately 1.1 acre. While impervious surfaces potentially reduce the total area that allows for surface water to percolate into the groundwater basin, the above-ground facilities' 1.1-acre footprint would not affect the overall groundwater percolation area of the Otay Valley groundwater basin as, after detention, surface runoff would be discharged onto adjacent undeveloped land. Therefore, the proposed action's contribution to a significant impact to groundwater recharge would not be cumulatively considerable.

Drainage Alterations

The geographic context for the analysis of cumulative impacts relative to localized alteration of drainage patterns encompasses the Otay and Tijuana watersheds. Land disturbance and development activities are expected to continue in the vicinity of these watersheds and basin. Even with the promulgation of NPDES storm water regulations, land disturbance and development activities throughout these watersheds and basin continue to contribute, however incrementally, to the overall surface and groundwater quality and flooding problems in the project area and in the downstream watercourses leading to the Pacific Ocean. Therefore, the baseline cumulative impact to the Otay and Tijuana watersheds from alterations of drainage patterns is significant.

Construction of the proposed project would implement BMPs to minimize the potential for erosion and siltation and maintain off-site flows inconsistent with pre-project conditions, such that runoff discharge does not increase to receiving waters. The proposed project's BMPs would also minimize the discharge of polluted runoff from the project site. In addition, the proposed project would implement standard construction practices from the District's WRMP, including Geo-SCP-2, Geo-SCP-3, Hyd-PDF-1, and Hyd-

SCP-1, to reduce impacts associated with storm water runoff pollution, including erosion and excess siltation, from operation of the proposed project to a less than significant level. Therefore, construction and operation of the proposed project would not result in a cumulatively considerable contribution to the alteration of localized drainage patterns within the regional cumulative impact area.

100-Year Flood Hazards, Flooding, and Inundation

The geographic context for the analysis of cumulative impacts for flooding and inundation encompasses the Otay and Tijuana watersheds. Impacts related to flood and inundation hazards are site-specific and are not cumulative in nature. The current project would not place any permanent structures in areas prone to flooding or inundation. Future development projects constructed within a FEMA-designated 100-year floodplain or floodway would be required to incorporate all applicable building standards related to flood hazards in order to minimize the impacts from these types of events. No cumulative impact would occur.

4.2.9 Noise

Excessive or Permanent Increase in Ambient Noise

The geographic limit that would be considered for the operational noise cumulative analysis would include only those projects in proximity to proposed above-ground facilities, since the proposed project pipeline would be passive and would not generate operational noise following construction. Several cumulative projects are proposed in the vicinity of the proposed project that would have the potential to permanently increase noise levels in the area as a result of increased vehicle trips, increased human activity, and new stationary sources of operational noise, such as ventilation or manufacturing equipment. Cumulative projects include the SR-11/Otay Mesa East POE project; new facilities at the Richard J. Donovan Correctional Facility (addition of 792 beds or 1,594 beds to the site); a new Otay Mesa Detention Center facility; development of two new business parks (Otay Crossings Commerce Park and Otay Business Park); and the East Otay Mesa Recycling and Landfill Facility project. Operation of the proposed project, along with these cumulative projects, would have the potential to result in a significant cumulative noise impact. Potential cumulative impacts that would result from the proposed project and these cumulative projects are addressed below.

Traffic noise would increase from the development of the Richard J. Donovan Correctional Facility Level II Infill project, Otay Crossings Commerce Park, Otay Business Park, and East Otay Mesa Recycling and Landfill Facility projects due to the increase in vehicle trips on project area roadways. The SR- 11/Otay Mesa East POE project would introduce a new source of traffic noise in the area by developing a new freeway and access between the United States and Mexico. Due to the undeveloped nature of the project area under existing conditions, new land development would likely result in a noticeable increase in traffic noise. However, operation of the proposed project, including pipeline alignment, the potential pump station, meter station, outfall structure and potential disinfection facility, would generate approximately four new daily vehicle trips, far less even than existing Border Patrol traffic on project area roadways. This small increment of additional traffic represents an insignificant contribution to traffic noise levels, and is not cumulatively significant.

The cumulative projects in the vicinity of the proposed project would have the potential to result in permanent increases in the ambient noise level as a result of operational noise, as well as introduce new receptors to the area. Development of the Richard J. Donovan Correctional Facility Level II Infill project and the new Otay Mesa Detention Center would include on-site stationary noise sources such as outdoor public address systems, multiple alarms, and outdoor recreational facilities for inmates. The

Otay Crossings Commerce Park, Otay Business Park, and East Otay Mesa Recycling and Landfill Facility projects would accommodate new uses that may include heavy machinery, vehicle trips, or other noise-generating equipment. Because the proposed project and these cumulative projects are located in proximity to each other, they have the potential to expose proposed sensitive receptors at the new Richard J. Donovan Correctional Facility bed towers, Otay Crossings Commerce Park, or Otay Business Park to new operational noise sources. Therefore, a potentially significant cumulative impact would occur. The proposed project would have the potential to result in a cumulatively considerable contribution to exposure to excessive noise levels if operation of the proposed above-ground associated facilities would, alone or in combination with cumulative projects, generate noise levels that would expose proposed receptors at the new Richard J. Donovan Correctional Facility bed towers, Otay Mesa Detention Center, Otay Crossings Commerce Park, or Otay Business Park to noise levels in excess of County of San Diego noise compatibility standards.

In the future, the potential disinfection facility located near the intersection of Donovan State Prison Road and Alta Road would be the closest operational noise source to the bed towers at the proposed Richard J. Donovan Correctional Facility expansion project or the new Otay Mesa Detention Center resulting from any of the proposed alternative alignments. Operation of the disinfection facility would generate noise levels up to 62 dBA CNEL at 50 feet and would not exceed the County of San Diego noise compatibility criteria for multi-family residences (65 dBA CNEL) at the proposed Richard J. Donovan Correctional Facility Level II Infill complex or Otay Mesa Detention Center, including the proposed housing facilities. Therefore, the proposed project would not contribute to any exceedance of County noise compatibility standards at this receptor.

The Otay Crossings Commerce Park is proposed for mixed-industrial development. The collocated pump station, meter station, and disinfection facility, near the United States-Mexico border, would be the closest operational noise source to the proposed Otay Crossings Commerce Park that would result from any of the proposed alternative alignments. The facility would be located approximately 850 feet east of the boundary of the Otay Crossings Commerce Park project site. At this distance, noise levels from operation of a collocated disinfection facility, meter station, and pump station would be approximately 47 dBA CNEL and would not be audible over ambient noise levels. Noise levels would not exceed the County of San Diego hourly noise level limit (70 dBA L_{eq}) or noise compatibility criteria (70 dBA CNEL) for mixed-industrial use. Therefore, the proposed project would not contribute to any exceedance of County of San Diego noise compatibility standards at this receptor.

Otay Business Park is also a proposed mixed-industrial development. The closest source of operational noise from the proposed project to the Otay Business Park would be located more than 2,000 feet from the proposed boundary of Otay Business Park. At this distance, noise levels from a collocated facility would not be audible over existing ambient noise. The proposed project would not contribute to any exceedance of County noise compatibility standards at this receptor. Therefore, the proposed project's contribution would not be cumulatively considerable related to permanent noise increases from operational noise sources.

Groundborne Vibration

Groundborne vibration is a localized phenomenon that is progressively reduced as the distance from the source increases. The geographic area of cumulative impacts that would be considered for the vibration cumulative analysis would be limited to projects within the immediate vicinity of the proposed project area. Several potential cumulative projects are located adjacent to the proposed project facilities and may be under construction simultaneously with the proposed project. These projects include the SR-11/Otay Mesa East POE project, Otay Crossings Commerce Park project, Otay Business Park project, East

Otay Mesa Recycling and Landfill Facility project, and Richard J. Donovan Correctional Facility Level II Infill project. These projects would likely require heavy construction equipment and would have the potential to generate vibration levels in excess of the County's vibration significance criteria. A cumulative impact would occur if the proposed project, combined with other cumulative projects, would have the potential to exceed vibration significance criteria at existing and planned sensitive receptors.

As described within Section 3.9, Noise, construction of the proposed project would not exceed County of San Diego significance criteria for groundborne vibration and groundborne noise at existing receptors. Construction of the proposed project would be linear and construction would only take place in one area for a short period of time. Therefore, it is unlikely that vibration from construction of the proposed project and a cumulative project would be in close enough proximity to combine to exceed vibration criteria at the nearest receptor. However, a proposed additional bed tower at the Richard J. Donovan Correctional Facility Level II Infill project and proposed industrial uses at the Otay Crossings Commerce Park and Otay Business Park are foreseeable projects that may be exposed to cumulative vibration impacts from construction activities. This scenario would only occur if the cumulative projects were constructed prior to the proposed project and were operational at the time of proposed project construction.

The proposed bed tower at the Richard J. Donovan Correctional Facility Level II Infill project is classified as a Category 2 land use. The proposed bed tower would be located approximately 620 feet west of the construction corridor for all pipeline alignments in Alta Road and would be located outside the applicable screening distances for construction vibration. Otay Crossings Commerce Park and Otay Business Park propose Category 1 land uses including research and manufacturing facilities. Based on the typical vibration levels for construction presented in Section 3.9 and Table 3.9-5, construction of the proposed project would have the potential to exceed County vibration criteria for a Category 1 use during typical construction activities up to 340 feet from source. Otay Crossings Commerce Park would be located adjacent to construction activities associated with the proposed project construction corridor along Paseo de la Fuente. Otay Business Park would be located at the southern end of Alta Road, more than 2,000 feet west of the nearest proposed project construction area. The proposed project would not result in a cumulatively considerable impact at Otay Business Park, but would potentially result in a cumulatively considerable contribution associated with vibration at Otay Crossings Commerce Park during construction of the southern portion of the selected pipeline alignment.

Construction of the proposed project would have the potential to result in a cumulatively considerable contribution related to groundborne construction and noise. Specifically, construction activities would have the potential to result in a cumulatively considerable impact during typical construction activities within 340 feet of Otay Crossings Commerce Park. If these facilities are not operational at the time of proposed project construction, no impact would occur. However, if these facilities are operational at the time of the proposed project construction, a cumulatively significant impact would occur. Mitigation for cumulative impacts would be required. See Section 4.4 below for mitigation measure Noi-1, which will reduce impacts associated with cumulative groundborne vibration.

Temporary Increase in Ambient Noise

Construction noise impacts are localized in nature because they are limited to the construction site where construction equipment is operating. Several potential cumulative projects are located adjacent to the proposed project alignments and may be under construction simultaneously with the proposed project, including the SR-11/Otay Mesa East POE project, Otay Crossings Commerce Park, Otay Business Park, East Otay Mesa Recycling and Landfill Facility, and Richard J. Donovan Correctional Facility expansion. These projects would also require heavy construction equipment and would have the

potential to result in noise levels in excess of the County's construction noise level limit. The proposed project would result in a cumulatively considerable contribution to this impact if construction of the proposed project would have the potential to exceed 75 dBA at existing and cumulative construction noise receptors.

As previously described, existing land uses are located outside of the screening distances for construction noise impacts. Because construction of the proposed project would be primarily linear, construction activity would only occur in one location for a short period of time. Due to distance between existing receptors and cumulative projects, and the nature construction activities, simultaneous construction of a cumulative project and the proposed project alignment would not combine to exceed 75 dBA at existing receptors. However, an expansion at the Richard J. Donovan Correctional Facility and industrial uses at the Otay Crossings Commerce Park and Otay Business Park are foreseeable projects that may include operational uses at the time of proposed project construction, and therefore may be exposed to construction noise during proposed project and cumulative project construction. This scenario would only occur if the cumulative projects are constructed prior to the proposed project and are operational at the time of proposed project construction.

The proposed complex at the Richard J. Donovan Correctional Facility would be located approximately 620 feet west of the construction corridor for Alternatives 1, 2, and 3 in Alta Road and would be outside of the screening distances for significant project construction noise. The Otay Business Park would be located more than 2,000 feet from the proposed construction corridor. Therefore, due to distance, a cumulative noise impact would not occur at these receptors.

The Otay Crossings Commerce Park would be located adjacent to the proposed project construction corridor along Paseo de la Fuente. Construction of the proposed project would have the potential to exceed the 75 dBA construction noise level limit up to 90 feet from typical construction activities. Therefore, the proposed commercial and industrial uses associated with the cumulative projects in the area would potentially be exposed to significant construction noise from the proposed project, if they are constructed first. Under this scenario, proposed project construction would result in a potentially significant impact to the Otay Crossings Commerce Park. If this cumulative project is not operational prior to proposed project construction, no impact would occur. However, if this cumulative project is operational prior to proposed project construction, a cumulatively significant impact would occur. Mitigation for cumulative impacts would be required. See Section 4.4 below for mitigation measure Noi-2, which would reduce impacts related to cumulative construction noise impacts.

Aircraft Noise

Exposure to aircraft noise is a localized impact and the area of cumulative impact that would be considered for aircraft impacts would be projects located within the Brown Field Airport Land Use Compatibility Plan Area of Influence. The Brown Field Airport is located approximately 2.5 miles west of the proposed project area. Future growth in the East Otay Mesa area, including the proposed SR-11, International Industrial Park, and Richard J. Donovan Correctional Facility Level II Infill projects would likely be located within the Brown Field Area of Influence. These development projects may be affected by aircraft noise at Brown Field and may contribute to a cumulative increase in ambient noise. However, the proposed project is not located within the Brown Field Area of Influence, and would not be affected by airport noise (Ricondo 2010). In addition, no additional aviation uses are planned in the immediate vicinity of the project site. The project does not propose, and would not result in, additional air traffic. No NSLU would be exposed to excessive noise levels from aviation activities as a result of the project. Therefore, the proposed project's contribution would not be cumulatively considerable.

4.2.10 Traffic

Circulation System Performance

The geographic context for the analysis of cumulative impacts related to traffic is the study area identified in the TIS for the proposed project (VRPA 2015), which includes the three roadway segments in the vicinity of the project area, as discussed in Section 3.10, Transportation/ Traffic. Because Alternatives 1, 2, and 3 differ only in areas that have no existing roadways, there are no differences among the three project alternatives' traffic study areas. Cumulative development projects were reviewed and identified based on previous traffic analyses completed in the study area, including the SR-11/Otay Mesa East POE EIR/EIS. Based on the analysis in the traffic impact study (VRPA 2015), no cumulative projects were identified to have a significant traffic impact on the proposed project's study area between 2014 and the expected opening year of the proposed project in 2020. Therefore, cumulative impacts associated with conflicts to the circulation system performance would be less than significant.

Further, the proposed project would add 17 heavy truck round-trips per day to the surrounding roadways during construction. Operation of the proposed project would require routine maintenance trips and would generate approximately one to three trips per week. The traffic impact study (VRPA 2015) analyzed the traffic impacts of the proposed project with the addition of other cumulative projects' traffic contributions and determined impacts to be less than significant. Therefore, a cumulative impact would not occur.

Conflict with Applicable Congestion Management Program

The geographic context for the analysis of cumulative impacts for conflicts with an applicable congestion management program is the County of San Diego. As discussed in Section 3.10, Transportation/Traffic, SANDAG's CMP is the applicable CMP for the County of San Diego region. Future projects within the County of San Diego would be required to comply with SANDAG's CMP requirements and development impact fees structure, used to require projects to pay their fair share contributions to future roadway and interchange improvements. SANDAG's CMP mitigates for cumulative traffic system impacts to the regional roadways systems through development impact fees. Therefore, cumulative impacts associated with conflicts to an applicable CMP would be less than significant.

In accordance with the SANDAG's CMP, projects that generate over 2,400 ADT or 200 peak hour trips must comply with the traffic study requirements of SANDAG's CMP. The proposed project trip generation would not exceed either of these thresholds and would not be subject to a CMP traffic study analysis. Therefore, a cumulative impact would not occur.

Change in Air Traffic Patterns

Impacts related to aircraft traffic are generally specific and limited to the Brown Field Airport Land Use Compatibility Plan Area of Influence. The cumulative projects listed in Table 4-2 do not include uses that would result in a change in air traffic patterns at Brown Field. Further, the proposed project does not include the use of air support from project construction and the project site is not located within the Brown Field Airport Land Use Compatibility Plan Area of Influence. Construction or operation of the proposed project would not result in any impacts to existing or future air traffic levels or patterns, or a change in location that would result in substantial safety risks. Therefore, a cumulative impact related to changes in air traffic patterns would not occur.

Hazardous Design Features

Impacts related to hazardous design features are generally site-specific. The cumulative projects listed in Table 4-2 would be required to comply with applicable design standards in order to avoid hazardous design features. The proposed project would not include the construction of new roadways or improving existing roadways. In addition, construction within existing roadways (i.e., Alta Road, Paseo de la Fuente) would occur in a way that would maintain existing conditions as they relate to pedestrians and bicyclists. Therefore, a cumulative impact related to hazardous design features would not occur.

Inadequate Emergency Access

The geographic context for the analysis of cumulative impacts relative to inadequate emergency access is San Diego County. The County is susceptible to a number of natural and human-caused hazards that require emergency response planning and emergency evacuation routes. Comprehensive emergency response plans, such as the San Diego County Emergency Operations Plan and the San Diego County Multi-Jurisdiction Hazard Mitigation Plan, are developed and adopted, and are reviewed, rehearsed, and revised regularly. The cumulative projects identified in Table 4-2 would be designed or mitigated to avoid impacts to existing emergency response plans and routes, similar to the proposed project. In addition, the proposed project would comply with Haz-SCP-2, which would require the contractor to implement a traffic control plan to ensure adequate emergency access in and around the construction site. Thus, the proposed project, along with the cumulative projects, would not result in a significant cumulative impact.

Alternative Transportation Facilities

The geographic context for the analysis of cumulative impacts relative to alternative transportation facilities is the roadway network in the vicinity of the project area. Similar to the proposed project, the cumulative projects identified in Table 4-2 would be required to comply with existing policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities. The proposed project would not construct or improve any roadways and construction within existing roadways (i.e., Alta Road, Paseo de la Fuente) would be conducted in a way to maintain existing conditions as they relate to pedestrians and bicyclists. Therefore, a cumulative impact related to alternative transportation facilities would not occur.

4.3 Cumulative Effects of the No Action Alternative

Under the No Action Alternative, no construction, including pipelines or related infrastructure, would occur and the project area would remain in its current condition. Therefore, the No Action – No Project would not result in any cumulatively considerable effects for any of the issue areas, including air quality, biological resources, cultural and paleontological resources, environmental justice, geology/soils, greenhouse gas emissions, hazards and hazardous materials, hydrology/water quality, noise, and transportation/traffic because no construction would occur.

4.4 Mitigation Measures

The only resource area requiring specific cumulative mitigation is noise. All other issues would be less than significant or reduced to less than significant with project-specific mitigation measures, PDFs, and SCPs, as listed in Sections 3.1 through 3.10. Impacts related to a significant cumulative increase in groundborne vibration levels would be reduced to a less than cumulatively considerable level with the

incorporation of mitigation measure Noi-1. Cumulative construction noise impacts would be reduced to a less than cumulatively considerable level with the implementation of mitigation measure Noi-2.

Noi-1 At least three weeks prior to the start of any construction activities within 340 feet of an operational Category 1 land use, the construction contractor shall provide written notification to the facility informing them of the estimated start date and duration of vibration-generating construction activities. In addition, the construction contractor shall implement the following construction best management practices during construction within these screening distances, as recommended by the Federal Railroad Administration in the High Speed Ground Transportation Noise and Vibration Impact Assessment (2012):

- a) Operate earthmoving equipment in the construction area as far away from vibration-sensitive sites as possible (within 340 feet of an operational Category 1 land use).
- b) Avoid vibratory rollers and packers within 1,260 feet of a Category 1 land use or 740 feet of a Category 2 land use.

Noi-2 During construction within 90 feet of a noise receptor, the construction contractor shall implement a plan to ensure that construction noise levels do not exceed an 8-hour average noise level of 75 dBA at the nearest occupied property. Typical measures that may be included in the plan include the following, as necessary, to achieve compliance with the noise ordinance:

- a) Use the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds) for construction equipment and trucks;
- b) Use “quiet” gasoline-powered compressors or other electric-powered compressors, and use electric rather than gasoline or diesel powered forklifts for small lifting;
- c) Locate stationary noise sources, such as temporary generators, as far from nearby receptors as possible;
- d) Muffle and enclose stationary noise sources within temporary sheds or incorporate insulation barriers;
- e) Limit simultaneous operation of construction equipment or hours of operation to reduce average noise level; and/or
- f) Utilize noise curtains or other temporary noise barriers to minimize construction noise.

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Chapter 5 **OTHER CEQA AND NEPA CONSIDERATIONS**

5.1 **Introduction**

State CEQA Guidelines Section 15128 requires that an EIR contain a brief statement disclosing the reasons why various possible significant effects of a proposed project were found not to be significant and, therefore, are not discussed in detail in the EIR. Chapter 3 of this Draft EIR/EIS addressed environmental issues found to have potentially significant impacts. In compliance with CEQA and consistent with NEPA, issues that were found to have no potential for a significant impact are discussed in Sections 5.2 and 5.3 below.

CEQA Guidelines Section 15126 requires that all phases of a project must be considered when evaluating its impact on the environment: planning, acquisition, development, and operation. As part of this analysis, the following issues are also addressed in this chapter:

- Growth-inducing impacts of the proposed project (CEQA Guidelines Section 15126.2[d]), addressed below in Section 5.4;
- Significant environmental effects that cannot be avoided if the proposed project is implemented (NEPA Section 102(2)(C), and CEQA Guidelines Section 15126.2[b]), addressed below in Section 5.5; and
- Significant irreversible environmental effects that would be involved in the proposed project should it be implemented (NEPA Section 102(2)(C), and CEQA Guidelines Section 15126.2[c]), addressed below in Section 5.6.

5.2 **CEQA Effects Found Not to be Significant**

Based on Appendix G of the CEQA Guidelines, which provides a checklist questionnaire by which potential environmental effects can be identified, the proposed project would not result in significant environmental impacts to aesthetics, agricultural resources, land use and planning, mineral resources, population and housing, public services, recreation, and utilities and service systems.

5.2.1 **Aesthetics**

A proposed project would have a significant impact on aesthetics if it would have a substantial adverse effect on a scenic vista, damage scenic resources within a state scenic highway, degrade the existing visual character or quality of the site, or create a new source of adverse light or glare.

Otay Mountain, part of the San Ysidro Mountains, rises to an elevation of 3,566 feet and is a major scenic vista for the region (County of San Diego 2011d). The proposed above-ground structures

associated with the project would be a maximum of 30 feet tall and therefore would not be dominant physical features in the area. The proposed project would not block a scenic vista and impacts would be less than significant. In addition, there are no designated state scenic highways within the view shed of the proposed project area (Caltrans 2011). Therefore, the proposed project would not result in impacts on existing scenic resources within a state scenic highway.

While exposed surfaces, construction debris, and construction equipment may temporarily affect the aesthetic quality of the area in immediate proximity to construction activities, these impacts would be short-term and would cease when construction is completed. The potential pump station, metering station, outfall structure, and disinfection facility would be visible and aesthetically consistent with existing industrial and commercial development in the surrounding area. In addition, the outfall structure would be located within the footprint of an existing concrete culvert, and would be consistent with the existing conditions. Impacts to the visual character or quality of the site or its surroundings would be less than significant.

The proposed project would not include any large expanses of reflective material, such as glass commonly used for office buildings, because the above-ground facilities would be housed in masonry structures. All exterior lighting would be motion sensitive rather than steady burning, and would be downcast and shielded to keep light within the footprint of the facilities. All lighting would comply with the County's Light Pollution Code and would not create a new source of night lighting or glare. In addition, construction of the proposed project is not anticipated to occur at night. Therefore, impacts regarding light and glare would be less than significant.

5.2.2 Agriculture and Forest Resources

A proposed project would have a significant impact on agricultural resources if it would convert prime, unique, or statewide important farmland to nonagricultural use, conflict with zoning for agricultural use or with a Williamson Act contract, or result in a change to the existing environment that would result in the conversion of farmland to non-agricultural use. A significant impact would also occur if the proposed project results in a loss or conversion of forest land to non-forest use.

According to the California Department of Conservation, the proposed project site is identified as urban and built-up land surrounding Roll Reservoir, grazing land in the northern segment, and Farmland of Local Importance for the remainder of the proposed project site (CDC 2013a). However, no agricultural or grazing use of the land occurs at this time. While the proposed project area contains Farmland of Local Importance, the proposed pipeline would be located below-ground and the majority of the proposed project area would be restored to its previous condition after completion of construction. Above-ground facilities would encompass approximately 10 acres and would remove the potential for farming in this acreage. However, the locations of the above-ground facilities are not in areas preferable for farming, as these areas are located next to the United States-Mexico border, and adjacent to urban and built-up land next to Alta Road and Roll Reservoir. The project site does not contain Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Therefore, the proposed project would not result in the conversion of important farmland to non-agricultural use and impacts would be less than significant.

The proposed project would be located on land that is designated as Mixed Industrial, Light Industrial, District Commercial, Technology Business Park, Heavy Industrial, and Conservation (County of San Diego 2010). The project area is zoned as Specific Plan Area and Public/Semi-Public Facilities. The proposed pipeline alignments and associated facilities would not conflict with existing zoning in the project area.

The Williamson Act, or California Land Conservation Act of 1965, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use; in return, landowners receive property tax assessments that are much lower than normal because they are based upon farming and open space uses as opposed to full market value (CDC 2015). There are no Williamson Act contract lands in the proposed project area; thus, the proposed pipeline alignments and associated facilities would not be located on Williamson Act contract land (CDC 2013b). Therefore, the proposed project would not conflict with existing zoning for agricultural use or Williamson Act contract land.

No forest land or timberland is located within the proposed project area. The project area is within an industrial community; therefore, the project would not conflict with existing zoning for, or cause rezoning of, forest land, and would not result in the conversion of forest land to non-forest use. No impact would occur.

5.2.3 Land Use and Planning

A proposed project would have a significant impact on land use and planning if it would physically divide an established community; conflict with any applicable land use plan, policy, or regulation; or conflict with any applicable habitat conservation plan.

Implementation of the proposed project would not physically divide an established community; because construction activities would occur primarily within existing or proposed roadways, dirt roads, and/or utility rights-of-way. Additionally, the proposed pipeline alignments would be installed underground. The proposed above-ground facilities would either be located in an existing undeveloped area or adjacent to existing OWD facilities. Therefore, the proposed project would not physically divide an established community.

The proposed project would not conflict with the land use designations of the East Otay Mesa Specific Plan, Otay Subregional Plan, and the San Diego County General Plan. The current land use designations in the Specific Plan include Mixed Industrial, Light Industrial, District Commercial, Technology Business Park, Heavy Industrial, and Conservation. Therefore, the proposed project would not conflict with any applicable plan or regulation, and impacts would be less than significant.

The District is not a participant in the San Diego County MSCP Subregional Plan and is not subject to the provisions of that plan. In addition, as stated in Section 3.2, Biological Resources, the proposed project would implement mitigation measures to reduce direct impacts to biological resources to a level below significance. Therefore, no conflicts are expected with an applicable habitat conservation plan, and impacts would be less than significant.

5.2.4 Mineral Resources

A proposed project would have a significant impact on mineral resources if it would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state, or loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

According to the County of San Diego General Plan, Otay Mesa is classified as a Mineral Resource Zone 3, which states that mineral resources could potentially be present (County of San Diego 2011b). However, due to the narrow linear nature of excavation that would be required to construct the

proposed pipeline alignments, mineral resources within the pipeline corridor, if any, would be only temporarily affected during construction. This would not result in a permanent loss to mineral resources in the area since the construction corridor would be restored to its previous condition after completion of construction. Above-ground facilities would be located on approximately 10 acres, and would remove the potential for mineral resources. However, the locations of the above-ground facilities are not in areas preferable for mineral extraction, as these areas are located next to the United States-Mexico border, and adjacent to urban and built-up land next to Alta Road and Roll Reservoir. In addition, the current land use designations in the East Otay Mesa Specific Plan include Mixed Industrial, Light Industrial, District Commercial, Technology Business Park, Heavy Industrial, and Conservation, which do not provide for extraction of mineral resources on site. The proposed project site is not currently used (or planned for use) as a mineral resource recovery site (County of San Diego 2011b). No producing mines or quarries exist in the Specific Plan boundaries (County of San Diego 2010). Therefore, the proposed project would not result in the substantial loss of availability of a known mineral resource, or result in the loss of a recovery site delineated on a local plan. Thus, impacts would be less than significant.

5.2.5 Population and Housing

A proposed project would result in a significant impact on population and housing if it would induce substantial growth in an area either directly or indirectly; or displace substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere.

The proposed project would not directly induce substantial population growth, because it would not include the construction of homes or businesses. While the proposed project would convey a new supply of water to the area, it would supplement and provide a new source for the District's existing water usage and is not intended to allow for increased consumption beyond the amount identified in the District's 2009 WRMP and 2010 Urban Water Management Plan. The proposed project would not be used to expand the existing District customer base, as the expanded growth is already accounted for within the District's WRMP. In addition, the proposed project would use an existing reservoir, and would not include additional water storage facilities. The proposed project would not be designed to allow for individual connections. Therefore, the proposed project would not indirectly induce population growth. Impacts would be less than significant.

The proposed project area contains roadways, undeveloped land, and industrial and commercial uses; no residential uses are located within the project area. As such, the proposed project would not displace any existing households or people, or necessitate the construction of replacement housing elsewhere. No impact would occur.

5.2.6 Public Services

A proposed action would result in a significant impact on public services if it would result in substantial adverse physical impacts associated with the provision of or need for new or physically altered governmental facilities for fire protection, police protection, schools, parks, or other public facilities.

The nature of the proposed project generally would not necessitate the construction of new facilities or increase the demand on police protection, schools, parks, or other public facilities. However, the northern portion of the project area is classified as very high risk for wildfire, while the southern portion of the site is classified as little to moderate risk of wildfires (County of San Diego 2011a). The San Diego Rural Fire Protection District, a public department composed of a combination of paid and volunteer fire

personnel, and the California Department of Forestry have the responsibility for wildland fires in East Otay Mesa, including the proposed project area (County of San Diego 2010). The proposed project would not result in a substantial adverse physical impact associated with the provision of or need for new or physically altered governmental facilities related to fire protection. Thus, project impacts to fire protection service, police protection, schools, parks, or other public facilities would be less than significant.

5.2.7 Recreation

A proposed project would result in a significant impact on recreation if it would increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated, or require the construction or expansion of recreational facilities, which might have an adverse effect on the environment.

The proposed project would not add population or housing to the region and would have no direct or indirect effects on the use of existing neighborhood parks, regional parks, or other recreational facilities. In addition, the proposed project area does not include or propose public recreational facilities, the construction or expansion of which may have an adverse effect on the environment. Thus, no impacts would occur.

5.2.8 Utilities and Service Systems

A proposed project would result in a significant impact on utilities and service systems if it would exceed wastewater treatment requirements, result in the construction of new or expanded water or wastewater treatment facilities or storm water drainage facilities. A significant impact would also occur if the proposed project would require expanded water supply entitlements, result in a determination by the wastewater treatment provider or landfill that it does not have adequate capacity, or does not comply with federal, state, and local regulations related to solid waste.

The proposed project would not involve construction of facilities that would generate sewage (i.e. residences or businesses) and therefore would not exceed wastewater treatment requirements of the San Diego RWQCB. In addition, the proposed project would not demand wastewater treatment, and therefore would not exceed capacity of the local wastewater treatment provider. No impact would occur.

The proposed project includes the possible construction of a new water treatment facility and a new pump station. Although the need for these facilities is not yet determined, the potential construction impacts associated with the facilities were considered throughout the discussion of environmental impacts in this document. As discussed throughout Chapter 3, all potential impacts would be either less than significant or reduced to a less than significant level with implementation of mitigation measures Bio-1 through Bio-35, Cul-1 through Cul-10, and Haz-1. Therefore, impacts would be less than significant.

As described within Section 3.8, Hydrology/Water Quality, construction of the proposed project would temporarily alter the localized drainage pattern at the project site due to ground-disturbing activities such as grading and excavation. However, implementation of construction BMPs would control surface runoff and maintain off-site flows consistent with pre-project conditions. Therefore, construction impacts associated with new drainage facilities would be less than significant. Implementation of the proposed project would grade and elevate future Lone Star Road, and would cover the road with gravel. Although this element of the proposed project would alter topography, the gravel surface treatment

would mimic the existing conditions as related to infiltration of storm water. In addition, post-construction BMPs would be implemented, and no new drainage facilities or expansion of existing facilities would be required. Impacts would be less than significant.

The project proposes the conveyance of water, rather than the use of water for construction or operation. In addition, the conveyance of water was considered throughout the discussion of environmental impacts within Chapter 3. Therefore, the proposed project would not require new or expanded entitlements, and no impact would occur. The solid waste disposal facility that serves the project area is Otay Landfill, located in the City of Chula Vista. As of March 2012, this landfill had a remaining capacity of 24,514,904 cubic yards and its estimated cease-to-operate date is in 2028 (California Integrated Waste Management Board 2013). As a potable water conveyance line, the proposed project would not generate post-construction waste from operation of the pipeline or related facilities. All refuse generated during project construction and any necessary repair/maintenance work would be properly handled and disposed of at a permitted facility in accordance with local, state, and federal regulations. Thus, impacts would be less than significant.

5.3 NEPA Effects Found Not to be Significant

5.3.1 Fishing and Gathering

The proposed project has the potential to impact riparian or wetland habitat; however, this habitat does not currently support fish. In addition, the proposed project area is not currently used for gathering of natural food sources. Therefore, the proposed project would have no impact on fishing and gathering. Historic and pre-historic uses of the area for fishing and gathering are addressed as part of the cultural resources discussion provided in Section 3.3, Cultural and Paleontological Resources. Impacts to biological resources, including plant and animal species, are discussed in Section 3.2, Biological Resources.

5.3.2 Hunting

The proposed project would not be constructed on land currently used for hunting; therefore, no impact would occur. Previous uses of the project area for historic and pre-historic hunting are addressed as part of the cultural resources discussion provided in Section 3.3, Cultural and Paleontological Resources.

5.3.3 Visual Resources, Land Use, and Recreation

Please refer above to Section 5.2.1, 5.2.3, and 5.2.7 for a discussion on impacts related to visual resources, land use, and recreation, respectively.

5.3.4 Timber Harvesting

As stated above in Section 5.2.2, Agriculture and Forest Resources, the proposed project would not be located on land used for timber harvesting and would not result in the removal of trees that may be used for timber harvesting. Therefore, the proposed project would have no impact on timber harvesting.

5.3.5 Wilderness

The proposed project would not be located on land designated as wilderness. As stated above, all disturbed areas along the proposed project alignment would be restored to their previous condition following construction. The proposed above-ground facilities would be located on land designated as Mixed Industrial, Heavy Industrial, and Urban/Built Up (County of San Diego 2010). Therefore, the proposed project would have no impact on wilderness. Impacts to biological resources, including sensitive habitat, are discussed in Section 3.2, Biological Resources.

5.4 Growth Inducement

As required by State CEQA Guidelines Section 15126.2(d), an EIR must include a discussion of the ways in which the proposed project would directly or indirectly foster economic development or population growth, or the construction of additional housing and how that growth would, in turn, affect the surrounding environment. Growth can be induced in a number of ways, including the elimination of obstacles to growth, or through the stimulation of economic activity within the region. The discussion of removal of obstacles to growth relates directly to the removal of infrastructure limitations or regulatory constraints that could result in growth unforeseen at the time of project approval. According to CEQA Guidelines Section 15126.2(d), “it must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.”

As defined in the CEQ NEPA regulations at 40 CFR Section 1508.8(b), “growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate ...” are included in the list of indirect effects to be evaluated for a federal action. Growth inducement means the ways in which a proposed action could foster, either directly or indirectly, economic or population growth, or construction of additional housing in the surrounding environment. Growth inducement is generally a function of the presence or absence of existing utilities and public services in a given area.

5.4.1 Removal of an Impediment to Growth

Growth in an area may result from the removal of physical impediments or restrictions to growth, as well as the removal of planning impediments resulting from changes in land use plans and policies. Physical growth impediments may include nonexistent or inadequate access to an area or the lack of essential public services (e.g., sewer service), while planning impediments may include restrictive zoning.

The proposed infrastructure would provide the District with a new potable water supply from Mexico via a proposed conveyance line and associated facilities. However, it would supplement the District’s existing water usage and is not intended to allow for increased consumption beyond the amount identified in the District’s 2009 WRMP and 2010 Urban Water Management Plan. The District would not use the proposed project to expand its existing customer base. Even without implementation of the proposed project, the District would continue to service the existing and future surrounding population from its existing water supply. In addition, the proposed project would not be designed to allow for individual connections. The proposed project would not remove a planning impediment to growth because it would be consistent with the District’s 2009 WRMP and 2010 Urban Water Management Plan. Therefore, implementation of the proposed project would not result in the removal of a physical impediment to growth.

5.4.2 Population Growth

Project construction would provide demand for various construction trade skills and labor (approximately 20 short-term construction jobs). Based on project size and duration of construction, it is anticipated that the local labor force would meet this demand, which would not require importation of a substantial number of workers that would cause an increased demand for temporary or permanent housing in this area. The proposed project would not construct new housing or uses that would create significant additional employment opportunities. Therefore, the proposed project would not increase population growth or demand for housing in the San Diego region.

5.4.3 Economic Growth

Construction of the proposed project would provide a short-term opportunity for an approximately 20-person construction crew. Once constructed, the proposed project would require one staff person to perform maintenance. The potential metering station, pump station, and disinfection facility would each require one daily maintenance trip. Chemical deliveries for the disinfection facility would occur approximately once per week during the winter and twice per week during the summer. Therefore, the proposed project would only generate short-term employment opportunities during construction. An existing District staff member is expected to provide maintenance for the associated facilities. The additional economic activity during construction of the proposed project would be negligible compared to the economic growth of the greater San Diego region. Therefore, implementation of the proposed project would not result in substantial economic growth.

5.5 Significant and Unavoidable Environmental Impacts

In accordance with State CEQA Guidelines Section 15126.2(b), any significant unavoidable impacts of a project, including those impacts that can be mitigated but not reduced to below a level of significance even with implementation of all feasible mitigation measures, must be identified.

As previously described in Section 3.6, Greenhouse Gas Emissions, the energy emissions estimates in Table 3.6-5 and Table 3.6-6 are conservatively high because they do not take into account compliance with Ene-PDF-1 through Ene-PDF-4, which require high-efficiency pumps and motors, energy-efficient lighting, pump efficiency tests, and soft starts and stops to all project pumps and motors. Additionally, the estimates assume a worst-case annual average flow rate of 50 MGD and that UV treatment would be required at the disinfection facility. Further, by using this source of water, the District would be using significantly less imported water from the State Water Project and the Colorado River, both of which use significant energy to convey the water. Therefore, GHG emissions from the proposed project would likely be lower than reported in Table 3.6-5 and Table 3.6-6. At this time, sufficient detail is not available about the design and operation of the proposed facilities to determine where energy use may be reduced, and to what extent. For example, the specifications for the proposed pumps are currently unknown; therefore, the types of alternative pumps that are available cannot be determined. Final project design would determine whether the decreased energy use could reduce emissions to below a significant level. The potential pump station is projected to demand approximately 95 percent of total project energy use. Depending on final project design, this pump station may be eliminated. Removal of the pump station would reduce GHG emissions from energy use to approximately 240 MT CO₂e. This removal would reduce total GHG emissions to less than 2,500 MT CO₂e, which would reduce effects

related to GHG emissions to a less than significant level. A project that would result in a less than significant impact under the County's threshold would also not conflict with AB 32. However, eliminating the pump station may not be feasible. Therefore, effects related to GHG emissions are potentially significant and unavoidable. Because the County's threshold was established based on emissions reductions needed to meet the goals of AB 32, Alternatives 1, 2, and 3 would also conflict with AB 32 and effects would be significant and unavoidable.

All other significant impacts identified within Chapter 3 of this Draft EIR/EIS are determined to be less than significant or can be reduced to below a level of significance with the mitigation measures identified in Chapter 3.

5.6 Significant Irreversible Environmental Effects

Section 15126.2(c) of the State CEQA Guidelines requires a discussion of any significant irreversible environmental changes that would be caused by the proposed project. Specifically, Section 15126.2(c) states:

“Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible, since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.”

As defined in the CEQ regulations at 40 CFR Section 1502.16, NEPA also requires analysis of “any irreversible or irretrievable commitments of resources which would be involved in the proposal should it be implemented.”

Implementation of the proposed project would consume limited non-renewable resources. This consumption would occur during the construction phase of the project and would continue through its operational lifetime. The proposed project would require a commitment of resources that would include (1) building materials, (2) fuel and operational materials/resources, and (3) the transportation of goods to and from the proposed project. Construction of the proposed project would require the consumption of resources that are not renewable or which may renew so slowly as to be considered non-renewable. These resources would include the following construction supplies: aggregate materials used in concrete such as sand, gravel, and stone; metals such as steel, copper, and lead; petrochemical construction materials such as plastics; and fossil fuels such as gasoline and oil. Commitment of the resources would occur during operation of the proposed project. Resources committed would include fossil fuels for electricity, natural gas, and transportation. Compliance with all applicable building codes, as well as mitigation measures, would ensure that all natural resources are conserved to the maximum extent practicable.

The proposed project would involve an unquantifiable, but limited, use of potentially hazardous materials typical of infrastructure uses, including vehicle fuels, paints, cleaning materials, and caustic construction compounds. The proposed project would also include chemical deliveries to the proposed disinfection facility. However, these materials would be transported to and from the proposed project area in accordance with USDOT regulations and the CHP California Vehicle Code. Materials would be contained, stored, and used on site in accordance with manufacturers' instructions, applicable

standards, and regulations. Compliance with regulations would serve to protect against a significant and irreversible environmental change that could result from the accidental release of hazardous materials.

In summary, construction and operation of the proposed project would result in the irretrievable commitment of limited non-renewable resources, which would limit the availability of these particular resources for future generations. However, continued use of such resources would be relatively small scale compared to other developments. Additionally, the rate of loss of such resources would not be highly accelerated when compared to existing conditions and growth projections for San Diego County. Therefore, although irretrievable commitment of resources would result from the project, such changes would be less than significant.

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